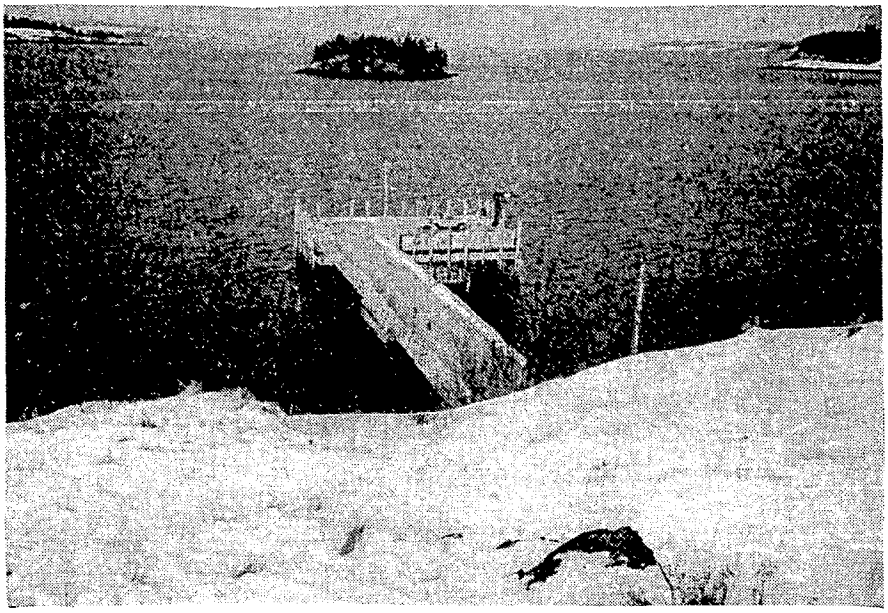




# PIER REVITALIZATION STUDY

## LUBEC, MAINE

KIMBALL CHASE
company, inc.

BATH, MAINE
CONCORD, NEW HAMPSHIRE
PORTSMOUTH, NEW HAMPSHIRE
SALEM, NEW HAMPSHIRE

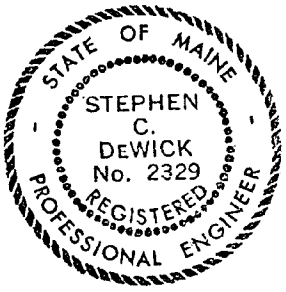


Maine Coastal Zone Management Program

# PIER REVITALIZATION STUDY,

# LUBEC, MAINE

JULY 1987




KIMBALL CHASE COMPANY, INC.
Bath, Maine
Portsmouth, New Hampshire
Salem, New Hampshire
Concord, New Hampshire

Financial assistance for this report was provided by a grant from Maine's Coastal Program, through funding provided by the U.S. Department of Commerce, Office of Ocean & Coastal Resource Management, under the Coastal Zone Management Act of 1972, as amended.

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FIGURES

KIMBALL CHASE
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Civil
Environmental
Engineers
Landscape Architecture

53 Front Street
Bath
Maine 04530

207-442-7029
443-1361

July 17, 1987

Mr. Ed Collins, Town Manager
Municipal Building
40 School Street
Lubec, Maine 04652

Subject: Pier Revitalization Study Report 87-1647

Dear Mr. Collins:

We are pleased to submit our Report on the Lubec Pier Revitalization Study, in accordance with our Agreement, dated January 30, 1987.

The data, upon which this study and its recommendations have been based, are the most current available concerning harbor management. The participation by the Economic Development Committee, Board of Selectmen, and members of your community have been appreciated throughout this study. We look forward to continuing the recommended project through its remaining phases.

Thank you for selecting Kimball Chase to assist you on this project.

Very truly yours,

Kimball Chase Company, Inc.

Stephen C. DeWick, P.E.
Project Manager

SCD/lmo

cc: Town of Lubec (15)
Robert Elder, MDOT
Robert G. Blakesley, SPO (7)

TABLE OF CONTENTS (CONT'D)

SECTION 1

# SUMMARY AND RECOMMENDATIONS

## Summary

The commercial pier in Lubec was constructed in 1978 at a cost of $478,000. The pier has seen little use do to its exposure to Johnson Bay and difficulties associated with the float and gangway ramp to the float. This study has evaluated the existing pier and made recommendations for improvement. The overall area surrounding the pier has been studied and recommendations made for the future management of the harbor area.

A review of existing oceanographic information was first made to determine forces acting upon the existing pier and the extent to which the pier and future expansions would have to accommodate these forces. It is generally accepted that Johnson Bay fills during a flood tide from the east through Cobscook Narrows. On the outgoing tide, the Bay drains through Lubec Channel and the commercial pier, which is located near the entrance to Lubec Channel. Tidal currents have been reported as high as eight (8) knots, near the channel entrance, while wave heights generally average two (2) feet when winds blow from the northwest. Reported wind speeds indicate northwest winds average 10 knots, and on occasion reach speeds in excess of 30 knots.

An assessment of the existing pier indicates the gangway ramp, serving the 16' x 20' float, is too heavy (4,500 pounds) and at mean low water reaches a slope of 1.8 horizontal to 1 vertical which is substantially steeper than the 3:1 desired. Due to the pier's exposure to Johnson Bay, northwest winds create waves which make docking difficult and sometimes hazardous. Berthing ships are not provided adequate tie up points and must use the extended fender piles, making casting off difficult, especially at low water. The arrangement at the single float and gangway ramp does not provide berthing space needed to serve commercial and pleasure boat traffic. The potential exists to serve as many as fifteen (15) commercial lobster boats and draggers, as well as twenty-four (24) pleasure boats and an occasional sardine boat.

The options available for revitalization of the Lubec Pier have included the following:

| Description | Capital Cost |
|---|---|
| **Wave Protection Systems** | |
| Sheathe Existing Pier | $ 287,000 |
| Fixed Breakwater | 5,000,000 - 10,000,000 |
| Floating Breakwater | 675,000 |
| Wave Energy Suppressors | 232,000 |
| **Float and Ramp Systems** | |
| Aluminum Ramp & Wooden Floats | $ 41,400 |
| Floating Ramp | 74,000 |
| **Dredging** | |
| East Side | $ 52,900 |
| West Side | 79,800 |
| **Engineering Costs for Pier Extension** | |
| Outer Deck Extension | $ 96,000 |
| "L" Extension | 62,000 |

Other aspects of Lubec Harbor, which have been addressed by this study include: harbor management and a mooring plan for the area near the commercial pier. The commercial pier, nearby marina and boat launching ramp provide an excellent opportunity for maximum utilization of the tide waters near Lubec, Maine.

## Recommendations

Based upon the findings of this report, the following recommendations are made:

1. The Town repair the existing facilities, including cleaning the pier, repairing the ladders and electrical service, and the removal of the gangway ramp, to allow for utilization of the existing pier.

2. The Town of Lubec enact the revised Harbor Ordinance (Appendix C).

3. The Town increase the Harbor Master's salary by paying him a percentage of the Harbor fees he collects, as well as his current $25 per year salary (See Section 6).

4. The Town raise $20,000 for the purchase and installation of a jib crane on the northwest corner of the pier.

5. The Town apply for a $50,000 Action Grant from the State Planning Office to assist on the jib crane installation.

6. The Town raise $74,000 for the design, permitting and installation of a new floating ramp system (Figures 14 and 15).

7. Final plans and permits be developed for dredging the east and west sides of the pier. The funds needed for this work will be $132,700.

8. The Town proceed with the field work and design of plans for the extension and sheathing of the existing pier.

9. The Town undertake a seven (7) year program (See Section 6) to revitalize the commercial pier and Harbor area as presented in the Schedule for Pier Revitalization and summarized below:

| Year | Total Funds Needed |
|---|---|
| 1987 | $ 2,600 |
| 1988 | 230,200 |
| 1989 | 266,000 |
| 1990 | 60,000 |
| 1991 | 1,153,000 |
| 1992 | 37,000 |
| 1993 | 654,000 |

10. The Town continue to evaluate a floating breakwater, as described on Section 5 of this report.

SECTION 2

# INTRODUCTION

## Project Area

Lubec is a small coastal town, with a population of 1,900, located on the northeastern tip of Lubec Neck. Lubec Neck is a one and one half mile peninsula extending northeast from the mainland toward Campobello Island. To the north of Lubec Neck lies Johnson Bay and to the south is Lubec Channel. West Quoddy Head, the eastern-most point in the United States is located in Lubec.

For visiting boaters a convenient place in Lubec to tie up is the Public Marina, which is located north of the town, behind the breakwater. Johnson Bay is an excellent anchorage area, located to the west of the town. All supplies are available close to the marina and commercial pier. Fuel will be delivered by tank truck. and water is available at Peacock's Dock.

Though Lubec is less than three miles distance by water from Eastport, there is no ferry. The only alternative is a 40 mile journey by road.

Figure 1 shows the location of Lubec on the Washington County Map.

## Background

The establishment of the Lubec Pier began with a 1974 study funded by the Economic Development Administration. That study proposed a wooden pile supported pier at a site next to the American Can Company. This site is the one which is now occupied by the Lubec Pier.

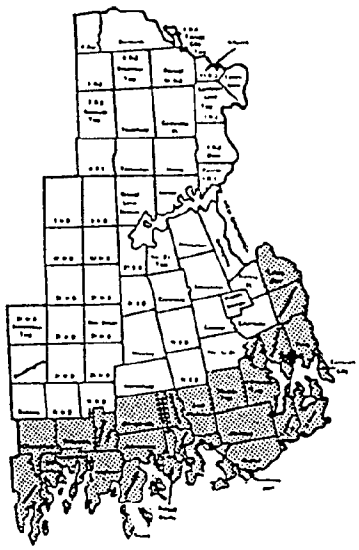
Detailed investigations during the design of the pier indicated subsurface conditions would not accommodate a traditional pile supported pier. The original pier concept was modified based upon concrete filled caissons below mean low water with concrete filled steel pipe piles to a precast concrete deck. The resulting pier while being substantial in its construction was smaller than originally intended and more costly.

## Purpose

The purpose of this Study is to undertake pier revitalization planning in order to overcome deficiencies. Making the pier usable is a necessity for improving the economic conditions of the local fisheries.

The Pier Revitalization Study consists of an oceanographic analysis, an engineering assessment of the existing pier, preliminary designs, cost estimates and a pier and harbor management plan.

# WASHINGTON COUNTY MAP



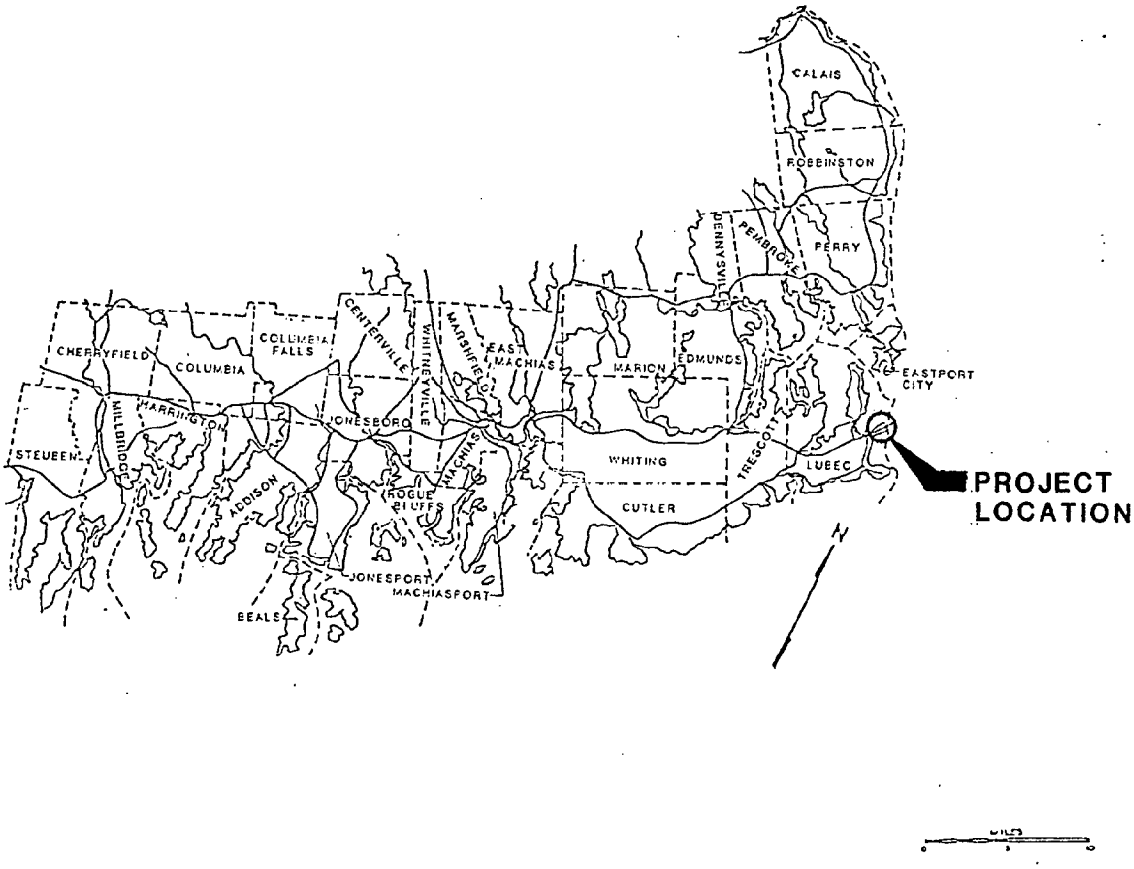



FIGURE 1



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company inc

SECTION 3

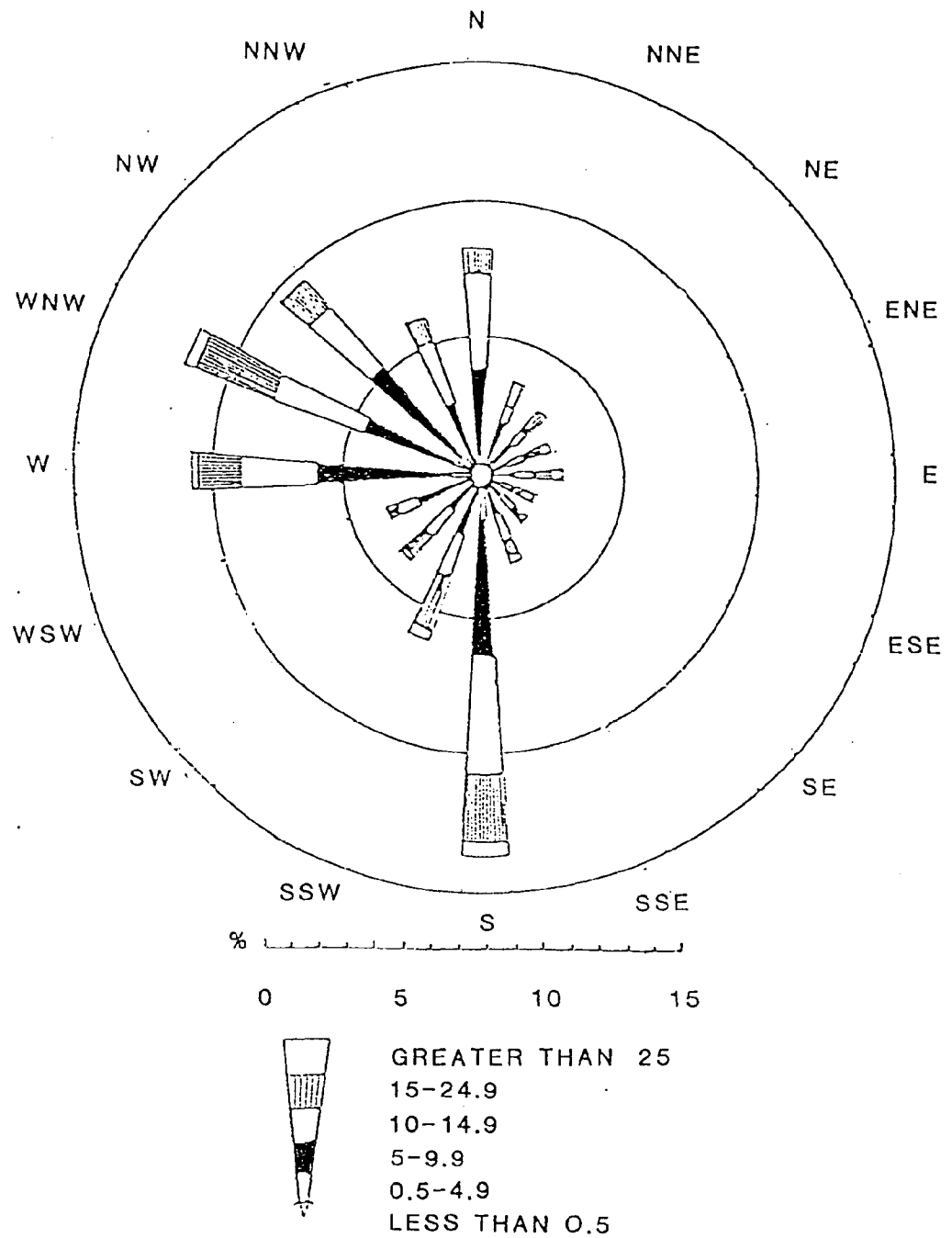
## OCEANOGRAPHIC ANALYSIS

Lubec is located in a unique area in regards to oceanographic occurrences which are caused by the Bay of Fundy and local weather conditions. Weather conditions include varying wind patterns, as well as storms and occasional hurricanes. Oceanographic forces include tides, currents induced by tides, ocean currents and wind generated waves. Acting together the weather conditions and oceanographic forces make up a condition that is unique to the Lubec area.

### Weather Conditions

On an annual basis, the prevailing wind direction in Maine is from the west. During the winter months north to northwest winds are prevalent. Along the coastline during the spring, summer and fall months a seabreeze resulting from the difference in air and water temperature causes the prevailing wind direction to shift to the east. Wind rose for Eastport, Maine (Figure 2) compiled The Department of Environmental Protection during 1985 shows that winds are generally calm (below 4 miles per hour) about 9% of the time. Approximately 70% of the time wind speeds are between 4 and 15 miles per hour. Wind speeds are between 5 and 25 miles per hour, approximately 18% of the time and are between 25 and 30 miles per hour 2% of the time. Winds in excess of 30 miles per hour occurred less than one tenth of 1% of the time. Although wind speeds rarely exceeded 30 miles per hour during the recording period, sustained winds in excess of 30 miles per hour have occurred in the recent past. On February 2, 1976 the "Ground Hog" gale occurred. This storm, one of the worst storms to hit the Lubec area, produced sustained southeasterly winds in excess of 70 miles per hour.

Coastal storms, or northeasters, can seriously affect coastal areas with lowland flooding, shoreline erosion and damage to waterfront structures. Tropical storms and hurricanes occasionally affect Maine in the summer and fall months. These tropical storms are similar to northeasters in their affects and types of damage. In 1954 two tropical storms hit the coast of Maine within a two week period. On August 31, Hurricane Carol, although wind speeds were no longer at full hurricane force, traveled northward along the Maine/New Hampshire border causing significant property and crop damage. On September 11, Hurricane Edna entered the coast near Lubec. Substantial damage resulted from the heavy rains and flooding of Hurricane Edna. Tropical storms typically do not affect Maine in most years. The National Climatic Center reports that the frequency of two or more storms occurring in any one year is about one year in twenty.




**1985 ANNUAL WIND ROSE** **FIGURE 2**

**EASTPORT, MAINE**

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## Tides

The Lubec tidal conditions are very different from those that occur near the open ocean coastline due to the Bay of Fundy region and the naturally enclosed area. As with other locations in Maine the tides are semi-diurmal, (two high and two low tides occur over the lunar day, a period of 24 hours and 50 minutes).

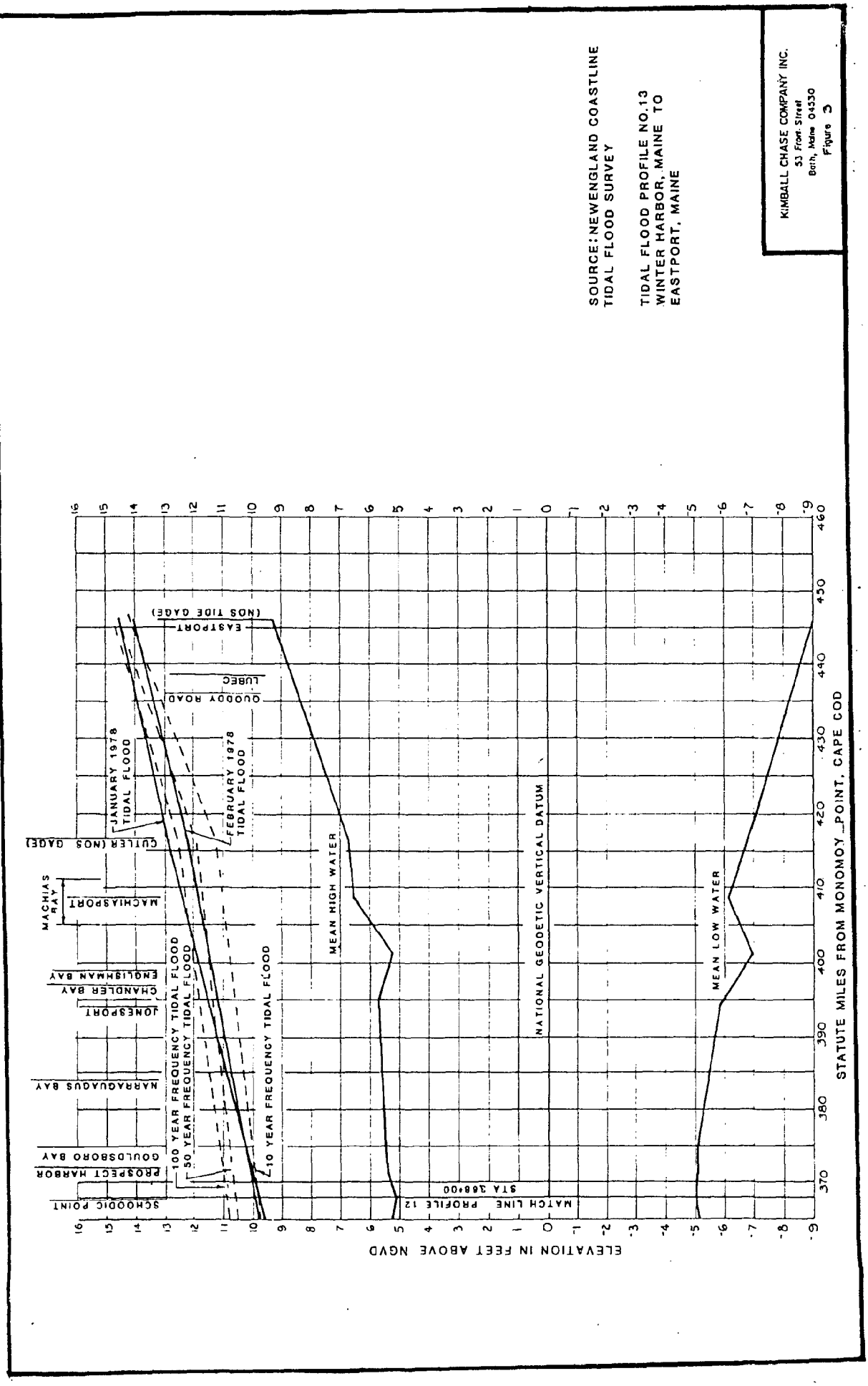
As reported by NOAA, (National Oceanic and Atmospheric Administration) the mean tide range for Lubec is 17.5 feet and the spring tide range is 20.0 feet above mean low water. 9.0 and 11.5 feet respectively above NGVD (National Geodetic Vertical Datum). Tide levels are affected by atmospheric forces such as winds and waves, as well as seasonal variations and the effects of the moon.

During a lunar cycle, there are two spring tides, one being considerably larger than the other. The higher spring tide occurs when the moon is near perigee (nearest to the earth) and the lower tide occurs at apogee (farthest from the earth). Figure 3 shows the tidal profile from Winter Harbor to Eastport and illustrates the January and February 1978 tidal flooding elevations. From Figure 3, the flood elevations and the expected probability of these events have been determined and are presented in Table 1. It is recommended that the design still-water level (SWL) be set at +12.8 NGVD in order to compensate for flooding of this nature.

Table 1

Flood Elevations for Lubec, Maine

| FREQUENCY | FLOOD ELEVATION ABOVE NGVD |
|---|---|
| 1 in 10 yrs. | 13.7 |
| 1 in 50 yrs. | 14.0 |
| 1 in 100 yrs. | 14.2 |


KIMBALL CHASE COMPANY INC.
53 Front Street
Bath, Maine 04530
Figure 3
SOURCE: NEWENGLAND COASTLINE
TIDAL FLOOD SURVEY
TIDAL FLOOD PROFILE NO.13
WINTER HARBOR, MAINE TO
EASTPORT, MAINE
ELEVATION IN FEET ABOVE NGVD
STATUTE MILES FROM MONOMOY POINT, CAPE COD
SCHOODIC POINT
PROSPECT HARBOR
GOULDSBORO BAY
NARRAGUAGUS BAY
JONESPORT
CHANDLER BAY
ENGLISHMAN BAY
MACHIAS BAY
MACHIASPORT
CUTLER (NOS GAGE)
EASTPORT (NOS TIDE GAGE)
LUBEC
GUDDDY ROAD
JANUARY 1978 TIDAL FLOOD
FEBRUARY 1978 TIDAL FLOOD
100 YEAR FREQUENCY TIDAL FLOOD
50 YEAR FREQUENCY TIDAL FLOOD
10 YEAR FREQUENCY TIDAL FLOOD
MEAN HIGH WATER
NATIONAL GEODETIC VERTICAL DATUM
MEAN LOW WATER
MATCH LINE PROFILE 12
STA 368+00

## Currents

Two proposed projects, the Pittston Oil Refinery and Passamaquoddy Tidal Power Project created interest in the local currents. Much literature is available on the subject of tidal currents in the Passamaquoddy and Cobscook Bay Region. Figures 4 and 5 are reproduced from Volume 2 of the Final Environmental Impact Statement, for the Pittston Oil Refinery Project. These figures show the tidal flow patterns in the area as well as current speeds. These figures show that the flood current filling Cobscook Bay and Johnson Bay occurs mostly from waters passing the north of Campabello Island through Head Harbor passage. Additional flood currents occur through the Lubec Narrows. The Final Environmental Impact Statement for the Pittston Oil Refinery Project states that the ebb tidal current through the Lubec Channel reaches 3.2 knots. Local opinion states that the flow through the Lubec Narrows reaches velocities greater than the reported 3.2 knots. With velocities such as these, the design of any marine structure has to take into account for the necessary type of protection in order to prevent scour and eventual undermining of the foundation of the structure due to the high velocity currents removing the bottom sediment.

## Design Wave Criteria For the Lubec Pier

This Section is a determination of the wave characteristics and design wave to be expected at the Lubec Pier. The Lubec Pier is located on the north side of Lubec, just westerly of the breakwater and public marina (Figure 6).

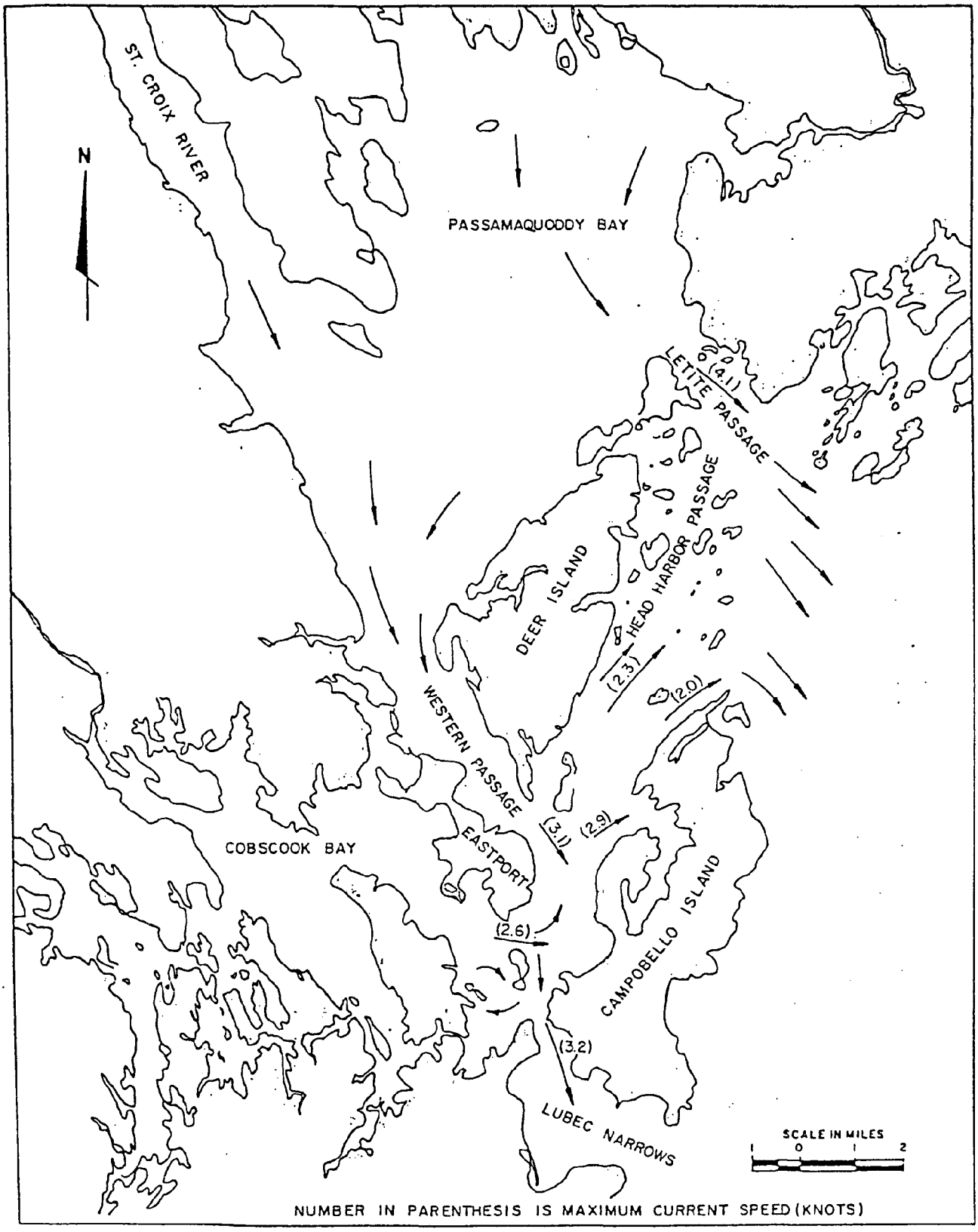
## Methodology

The object of this Section is to provide wave windcast information for waves which would effect the existing pier and any proposed expansion. The following was determined from available data:

A. Wave climate for the site or the range of wave heights which occur at the site.

B. The percentage of time over which any given wave height can be expected to occur.

C. The maximum design wave which can be expected to occur at the site.




EBB TIDAL CURRENT PATTERNS IN QUODDY REGION
(REPRODUCED FROM THE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PITTSTON OIL REFINERY PROJECT)

**FIGURE 4**



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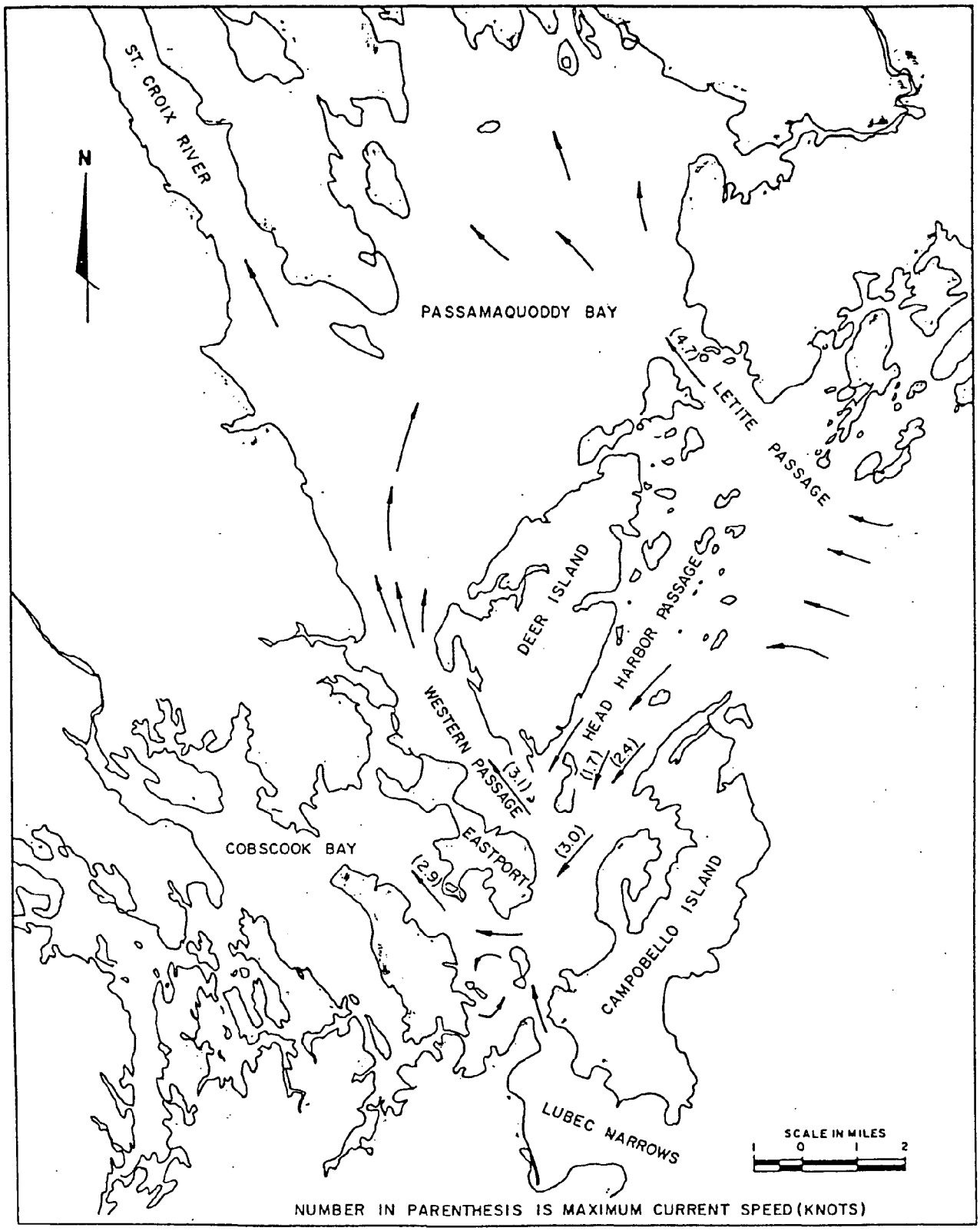
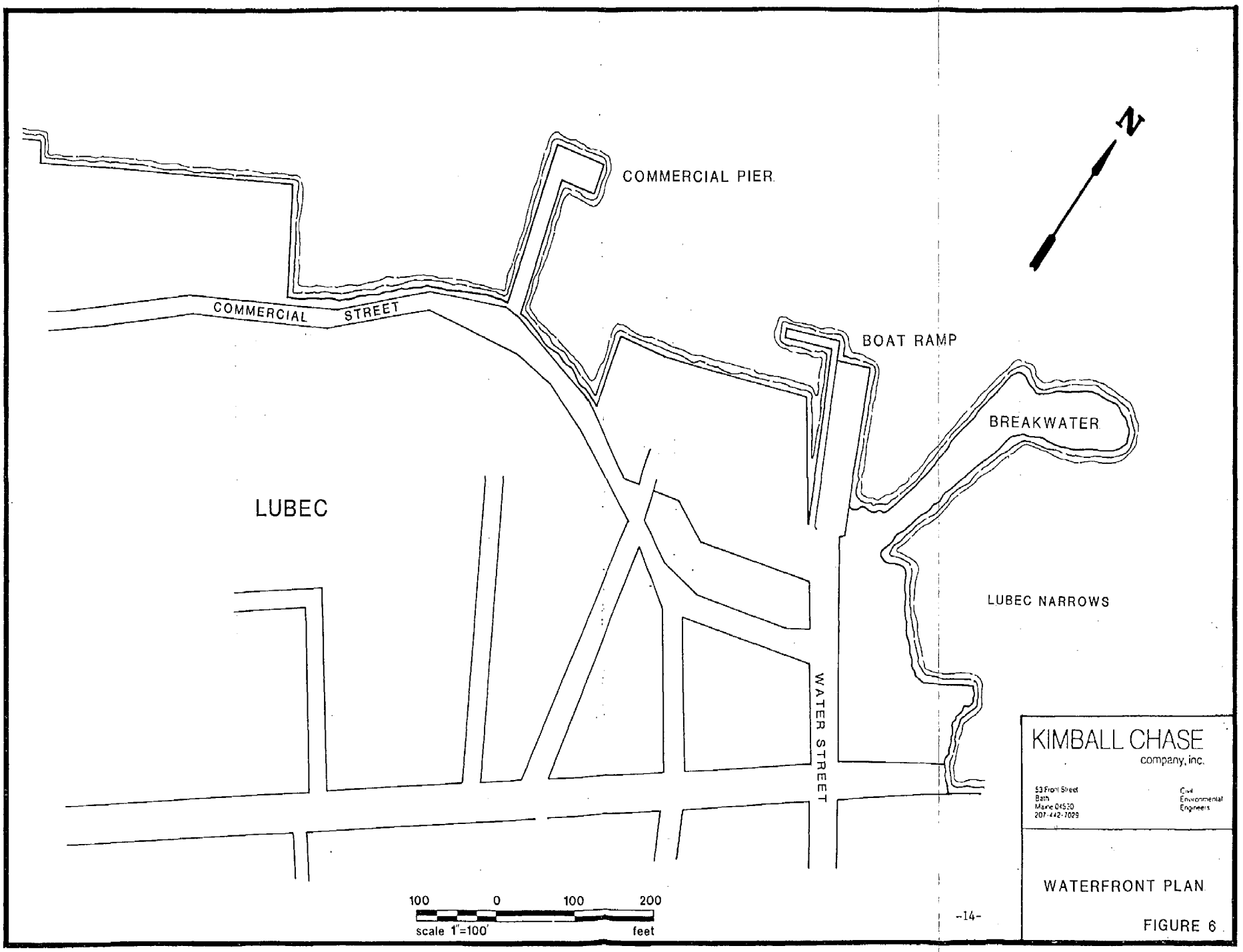



FLOOD TIDAL CURRENT PATTERNS IN QUODDY REGION
(REPRODUCED FROM THE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PITTSTON OIL REFINERY PROJECT)

**FIGURE 5**

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Maine 04530
207-442-7029

Civil
Environmental
Engineers

WATERFRONT PLAN

FIGURE 6

Wave climate can be defined as the range of wave heights which can be expected at a site over a period of time. The wave climate for a given area is usually summarized or presented as wave rose. The rose graphically displays the range of wave heights and wave approach directions which can be expected in any given year.

A wave rose is constructed from wave measurements and observation over several years time. The greater number of years of observations, the greater accuracy of the wave rose in predicting the actual wave climate of an area.

Wave height is a function of wind velocity, duration of wind velocity, the constancy of wind velocity in any given direction, the distance over open water which the wind blows (fetch), and the depth of water over which the waves are transmitted.

Ideally, wave climate for a given location should be defined by measuring wave height, and approach direction using a continuous wave recording meter. Measurements should be gathered for several years time. Practically, this task is unfeasibile and almost impossible with respect to the ability of wave meters to record continuously without malfunction.

Without actual data from the site, wave climate can be estimated from local or area wind data and application of wave theory with consideration of the site characteristics with respect to wind direction exposure, fetch and depth of water at the site.

In order to prepare a wave climate summary for the site of the Lubec Pier, a methodology for wave forecasting, as presented in the U.S. Army Corps of Engineers, Coastal Engineering Research Center, Shore Protection Manual was utilized. This methodology determines the height of waves by mathematically constructing theoretical curves relating wind fetch to wind velocity.

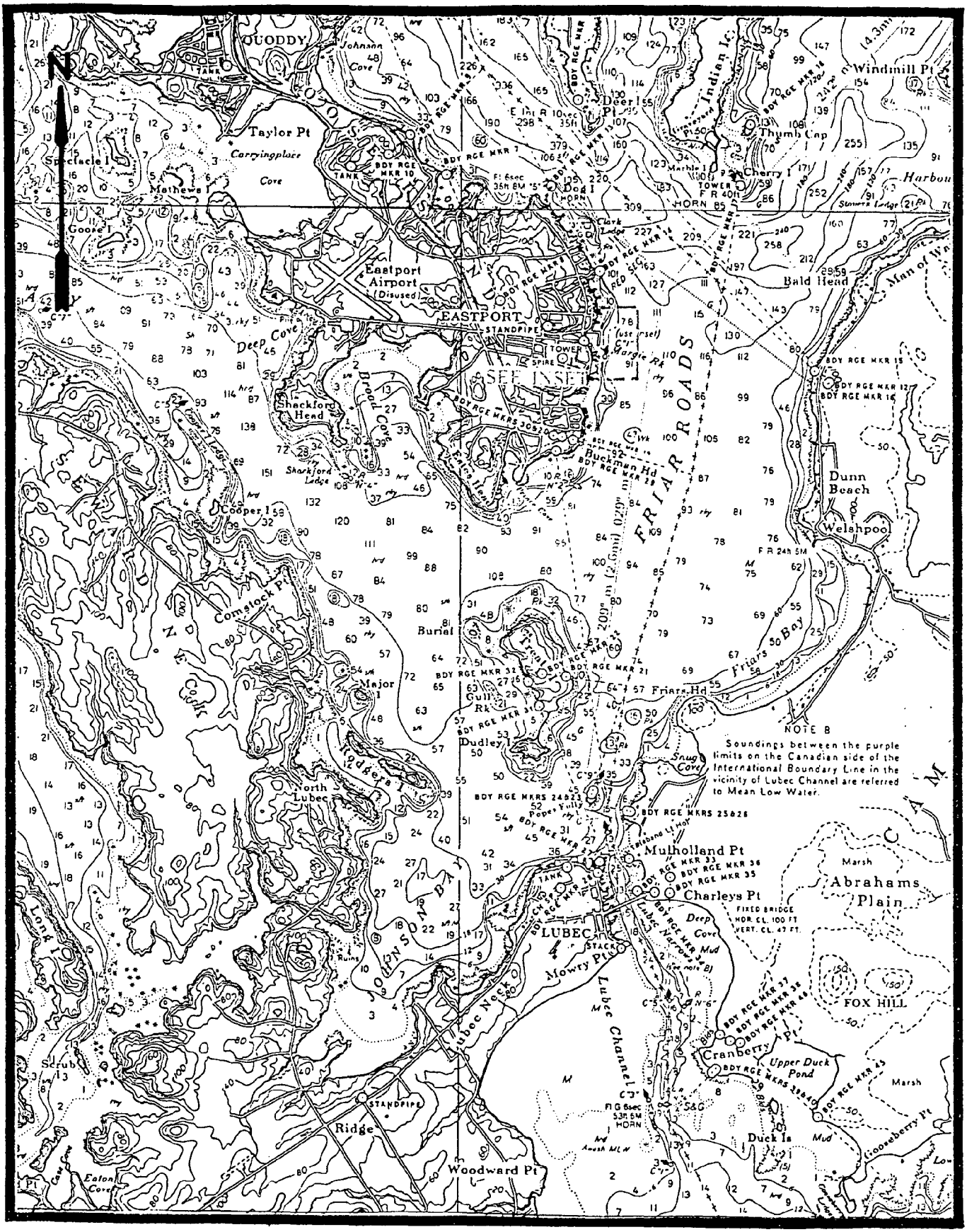
Utilization of this method requires the following information at the site:

A. Fetch over a given wind direction.

B. Wind velocity over a given wind direction.

C. Average depth over the given fetch.

Fetch and depth information from the sixteen points of a compass, where determined directly from NOAA hydrographic chart of the Lubec Region (Figure 7). While depths over the various fetch directions were not constant, the average depth was selected to represent the reach of the fetch.




NOAA HYDROGRAPHIC CHART FIGURE 7



KIMBALL CHASE
company inc

Wind velocity from a given compass direction, was determined using wind velocities measured in Eastport, Maine.

The Lubec Pier site lies on the northerly side of Lubec and is sheltered by land and the Lubec breakwater from waves along several compass points.

Wind data from Eastport indicates that wind conditions along this portion of the coast are calm about 9% of the time. Further, the Lubec Pier is entirely protected from waves generated from northeast through the south to west southwest. The site is also protected, by islands, when the winds are generated from the north northwest and the north. Therefore, the Lubec Pier site should be calm about 72% of the time during any given year.

The remaining compass points, their effective fetches and the average depths are presented below.

| Direction | Fetch (Nautical Miles) | Average Depth (Feet) |
|---|---|---|
| West | 1.2 | 35 |
| West Northwest | 1 | 45 |
| Northwest | 4.4 | 50 |
| North Northeast | 6 | 30 |

Wind velocity increments and durations from each of these compass points where then summarized and compared with effective fetch lengths to determine the resulting wave height from the Corps of Engineers wave curves. Wind velocity increment categories derived from the wind rose used were:

The highest velocity in each increment was used as a representative velocity for the duration from a given compass point.

The results of the curve determinations, including the allowance for calm conditions and winds from the compass point which would not create significant waves at the site are:

| Wave Heights | Percent Time (Annual Basis) |
|---|---|
| Less than .5 feet | 72.5 |
| .50 feet to 1.0 foot | 13.0 |
| 1.0 foot to 2.0 feet | 12.5 |
| 2.0 feet to 5.0 feet | 2.0 |
| 5.0 feet and larger | <0.1 |

Water Depths & Subsurface Conditions

Information obtained from the General Subsurface Investigation Report by Jordan Gorrill Associates and the NOAA hydrographic chart indicated that there is a twenty-two (22) foot water depth on the northern face of the pier at mean low water. The twenty-two (22) foot water depth at mean low water is sufficient for the vessels currently using the commercial pier.

Vessels using the inner side of the pier have an available water depth of ten (10) feet. With dredging, as discussed in Section 5, the available water depth would be eighteen (18) feet at mean low water.

Subsurface conditions, as indicated by the Jordan Gorrill Associates report, shows that from the shoreline to approximately 250 feet in a northerly direction, the bedrock is overlain by 1 to 13 feet of a gravelly sand. Beyond the 260 footpoint, the bedrock surface drops off and the overburden depths thicken.

The strong currents cause the soils beyond the 100 foot point to be in a very loose condition. Because of the loose and shallow soil conditions in the area of the pier, any extensions to the pier would require and extensive subsurface investigation to determine overburden depths and to confirm bedrock elevations.

SECTION 4

## ENGINEERING ASSESSMENT OF EXISTING PIER

The existing 190 x 30 L shaped pier in Lubec, Maine was built in 1978. The existing pier is constructed on concrete filled steel pipe piles with a pre-cast concrete deck. The pier was designed and constructed with a 51 foot gangway ramp and a 16 x 20 foot float. Numerous problems including the overturning of the float have occurred since the completion of construction. Structurally, the existing pier is in good condition and no major problems should be encountered in the near future. With the design of the gangway ramp being made with 4 x 6 inch timbers for the entire length the weight of the gangway ramp was approximately 4500 pounds. The weight of the ramp, combined with the slope that the ramp reached at low water, forced the original float to either overturn or sink.

Maintenance of the existing pier should prolong the useful life of the pier. A recommended program is presented as follows:

Maintenance Program
Existing Pier
Lubec, Maine

Annual Tasks

| | | |
|---|---|---|
| Visual Inspection of: Ladders, Flotation for Floats, Ramp Rollers, Float Connectors, Hoists, Utility Lines and Outlets, Fender Piles | = | $ 240 |
| Maintenance: Tighten Nuts, Bolts & Screws | = | 120 |
| Parts & Supplies | = | 200 |
| Total: | $ | 560 |

(Continued)

Five Year Tasks

Visual Inspection Of:

| | | |
|---|---|---|
| Pipe Piles | | |
| Steel Caissons | | |
| Concrete Fill @ Caissons | | |
| Concrete Crack Survey | = | $ 600 |
| Maintenance: | | |
| Paint/Stain Wooden Members | = | 300 |
| Replace Flotation | = | 1,500 |
| Paint Floats | = | 200 |
| Total: | | $ 2,600 |

Ten-Year Tasks

Maintenance:

| | | |
|---|---|---|
| Scrape Piles from Low to High Water | | |
| Sand Blast Piles from High Water to Deck | | |
| Paint with Epoxy Compound | = | $35,500 |

SECTION 5

# PRELIMINARY DESIGN AND COST ESTIMATES

## GENERAL

The Lubec Commercial Pier has seen little use since its construction in 1978. Various suggestions have been offered in an attempt to make the commercial pier more usable. These suggestions have been addressed. The design concepts and cost estimates are presented below:

### Wave Protection Systems

The Lubec Pier as discussed in Section 3 of this report often experiences large waves due to northwest winds. Discussion has led to believe that if a wave protection system was established for the pier, use of the pier would increase. Four alternatives for wave protection have been evaluated in this report. These four methods include sheathing the existing pier, fixed and floating breakwaters and wave energy suppressers. A detailed cost estimate for each method is presented on the following page (Table 2).

Sheathing the existing pier would involve a construction of new concrete caissons and sheathing (Figure 8). This type of system would absorb and reflect the striking wave's energy. The sheathing would allow for the inner side of the "L" shaped pier to be calm during winds and storms, so that the float and ramp could be used for loading and unloading during these adverse conditions. From a preliminary structural evaluation, the forces which would act upon the pier, should the pier be sheathed, would be greater than the pier was designed to accommodate. The use of additional caissons to support the added load would be necessary. The advantages to sheathing the pier include, an area protected from waves and currents for loading/unloading and maintenance, and a relatively inexpensive complete wave protection system. Disadvantages to the sheathing of the pier include a relatively small area protected for the money spent. The estimated cost to sheathe the existing pier including engineering and construction would be $287,000.

A breakwater at the Lubec Commercial Pier Site could consist of a fixed rubble-mound structure or a floating breakwater. A fixed breakwater would consist of quarry waste, armor stone and concrete (Figure 9). Such a breakwater would entitle an extensive study for proper location and environmental studies to determine the impact upon marine life. The advantages of a rubble mound structure include a complete wave protection system and a large protected area. The disadvantages to this type of a

system are the construction costs, engineering and permitting cost, and the time involved in studying the area and designing the system. The cost of constructing a solid fixed breakwater for the depths of water experienced in Lubec would range from $5 to $10 million. A floating breakwater (Figure 10) would consist of a floating structure anchored by mooring blocks and mooring chains. This structure would not completely remove the waves but would substantially diminish their size and force. A floating breakwater system would provide for a relatively large calm area around the pier site. The disadvantages of a floating breakwater are yearly maintenance costs, some wave energy passing by the breakwater, and capital costs. Floating breakwaters cost approximately $1,000 per linear foot. A floating breakwater to protect the pier site would cost an estimated $675,000.

Table 2

Cost Estimates for Wave Protection Systems

Sheathing

| | |
|---|---|
| Caissons | $ 40,000 |
| Support Pipes | 32,000 |
| Sheathing | 150,000 |
| Sub-total: | $ 222,000 |
| Contingency: | 33,000 |
| Engineering: | 32,000 |
| Total: | $ 287,000 |

Fixed Rubble Mound Breakwater

| | |
|---|---|
| Fill Material ($5,000-10,000/L.F.) | $3,750,000 - 7,500,000 |
| Contingency: | 550,000 - 1,100,000 |
| Engineering & Permitting: | 700,000 - 1,400,000 |
| | $5,000,000 -10,000,000 |

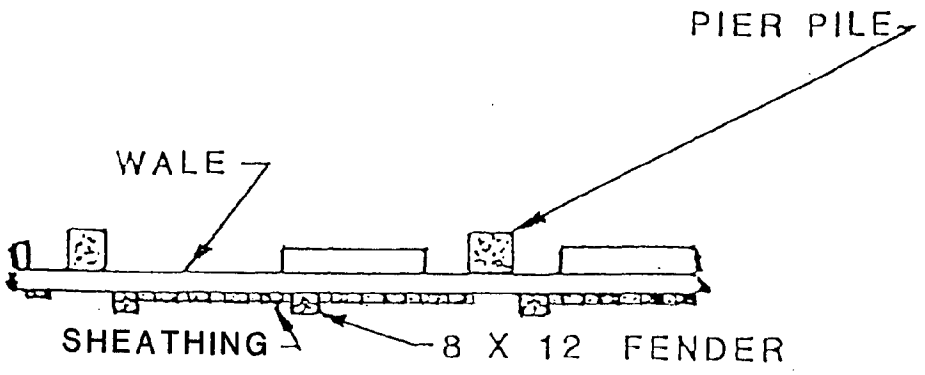
Table 2 Cont'd

Floating Breakwater

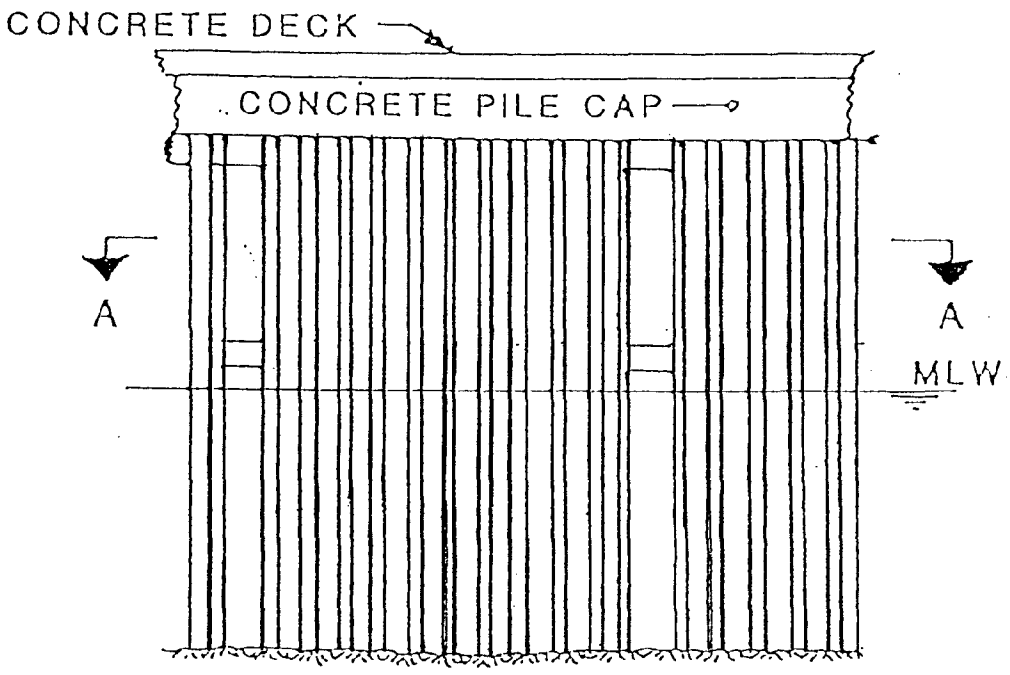
| | |
|---|---|
| Breakwater $1,000/L.F. | $500,000 |
| Contingency: | 75,000 |
| Engineering & Permitting: | 100,000 |
| Total: | $675,000 |

Wave Suppressors

| | |
|---|---|
| Caissons | $ 40,000 |
| Support Pipes | 32,000 |
| Suppressors | 102,000 |
| Subtotal: | $174,000 |
| Contingency: | 26,000 |
| Engineering: | 32,000 |
| Total: | $232,000 |




SECTION A-A

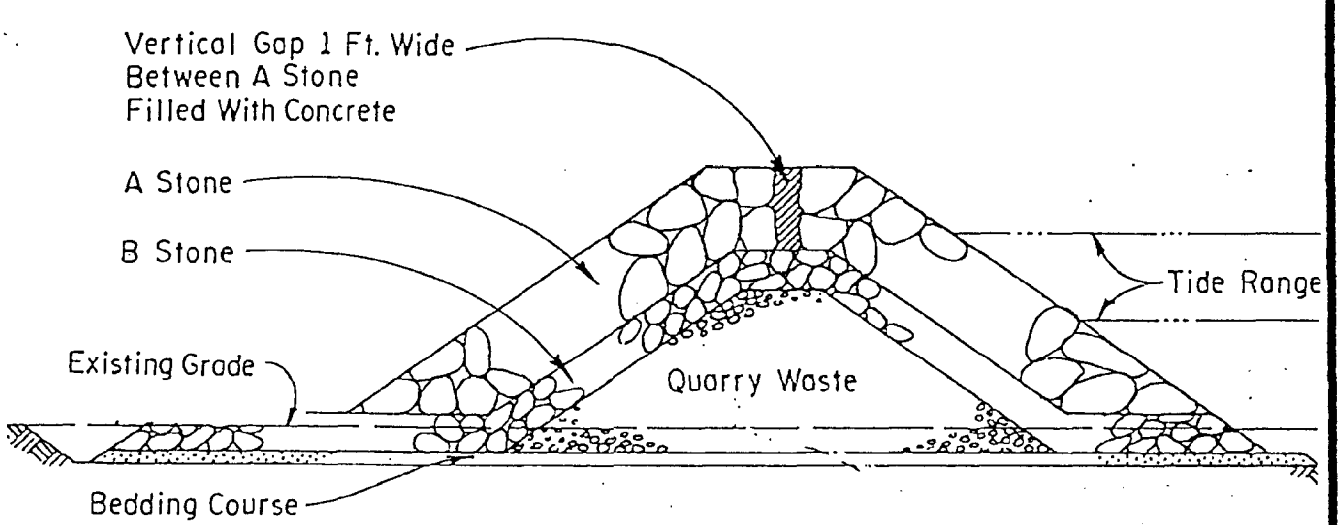



FRONT ELEVATION

**TYPICAL SHEATHING** **FIGURE 8**



KIMBALL CHASE
company inc

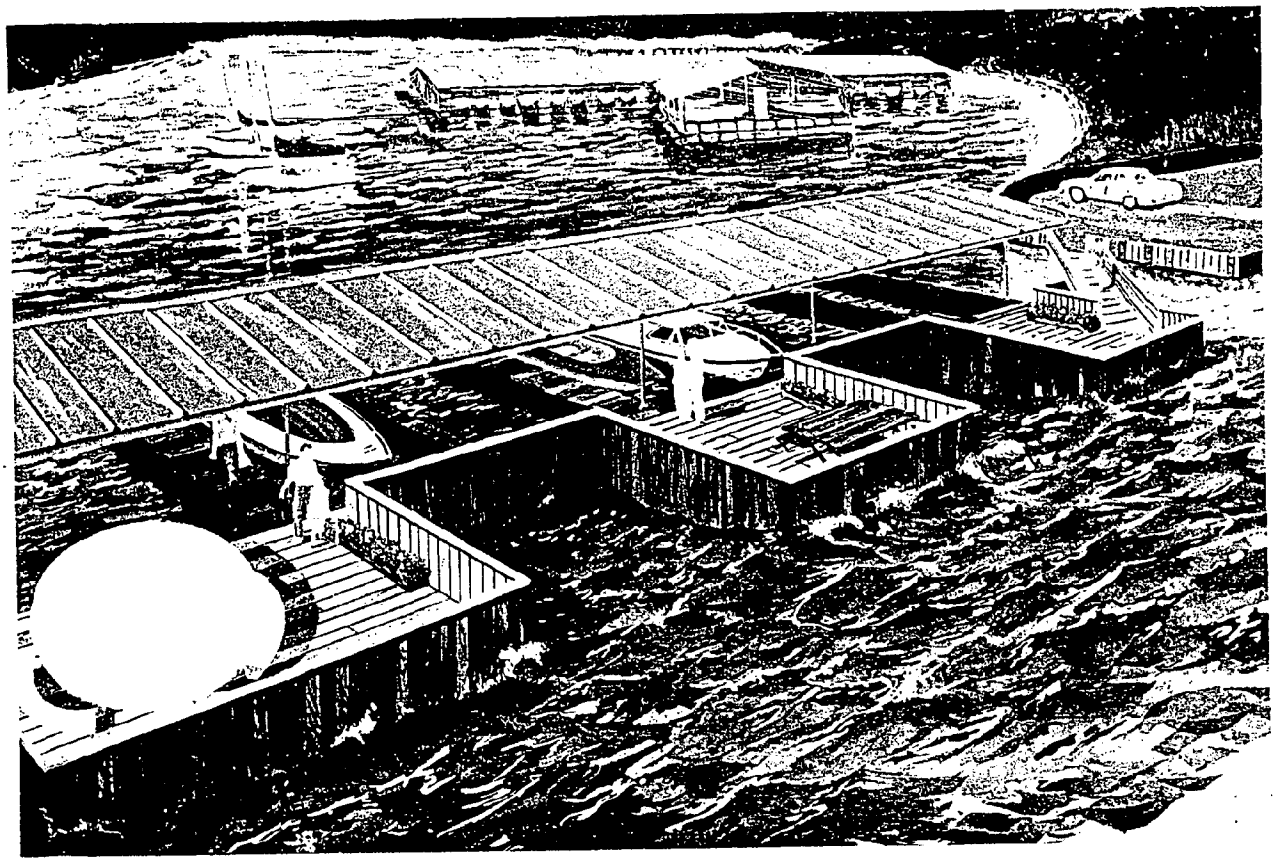


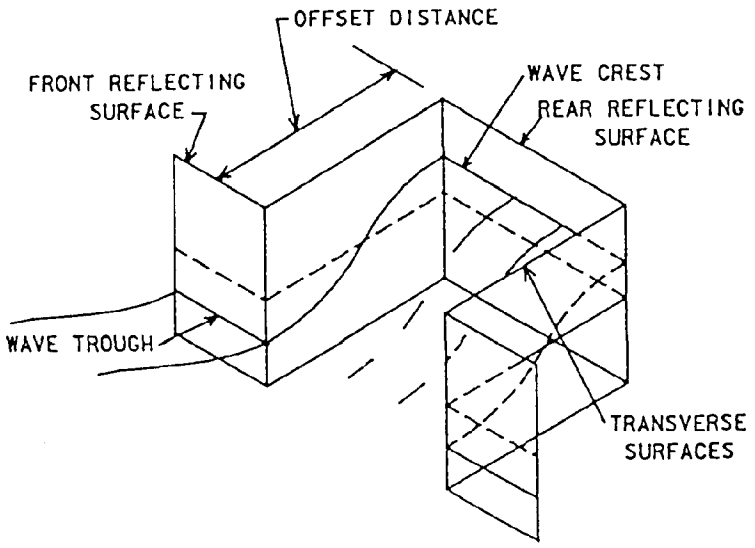

# TYPICAL BREAKWATER CROSS SECTION

FIGURE 9



KIMBALL CHASE
company inc

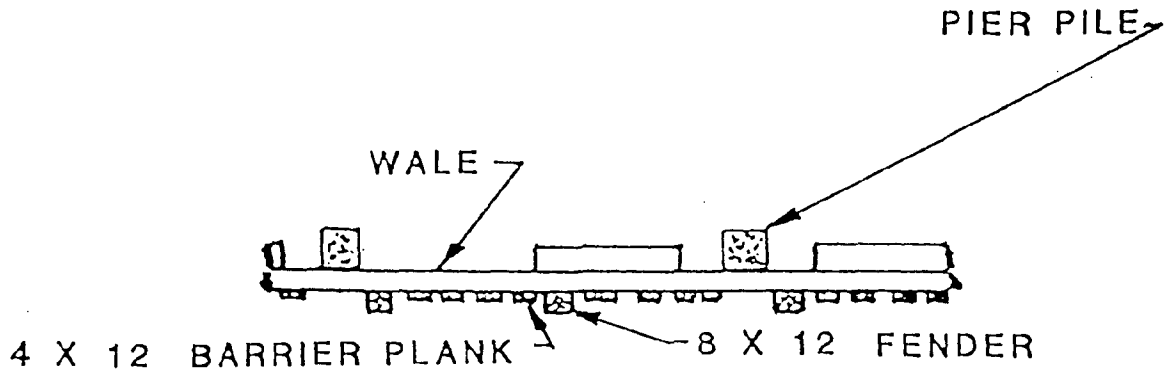




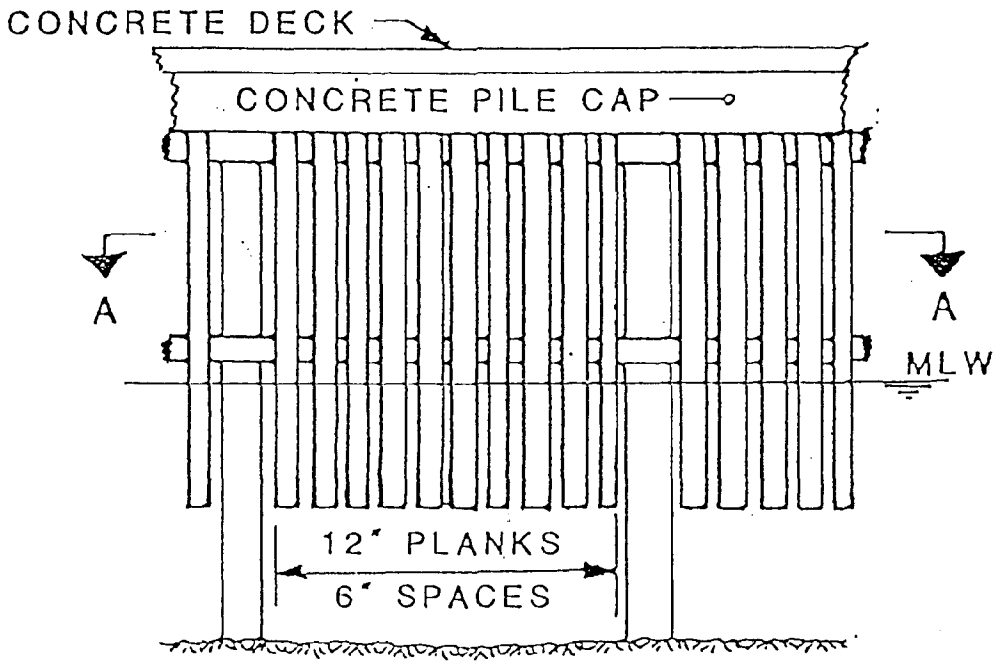

**TYPICAL FLOATING BREAKWATER** **FIGURE 10**



KIMBALL CHASE
company inc




SECTION A-A




FRONT ELEVATION

**TYPICAL WAVE SUPPRESSOR** **FIGURE 11**



KIMBALL CHASE
company inc

Wave suppressors consist of vertical planking placed along the outer edge of the pier (Figure 11). These wave suppressors reduce the size and energy carried by waves. Due to strong tidal currents and the fact that the existing pier was not designed to sustain the additional loading, the wave suppression system would have to be supported by additional caissons and pipe piles. Although the wave suppressors would not eliminate the wave action on the inner side of the pier, they would reduce the wave action to allow use of the pier during times when the pier is presently not usable. Another advantage to this system is the lower construction costs. The disadvantages to this system include a small protection area and a small amount of wave energy passing though the system. The cost for such a wave suppressor system would be $232,000.

Corrections to the Float and Ramp System

As mentioned in the previous section, the existing gangway ramp is too heavy for the float that was designed for use with this pier. Currently the float has been removed and the ramp is tied to the pier. A cost breakdown for the two options for correcting the float and ramp system are presented in Table 3.

A new gangway ramp and float system is shown by Figures 12 and 13. This system consists of four 10 x 20 floats and a new aluminum gangway ramp. A new aluminum ramp would eliminate the problems experienced with a heavy wooden ramp currently used. The new 10 x 20 floats would allow for the berthing of boats and for the loading and unloading of supplies equipment and personnel. The new gangway ramp would cost $12,500 and the new floats would cost $19,500. The total cost for this system would be $41,400.

An alternative system to the gangway ramp and float system would be a floating ramp system (Figures 14 and 15). This system would attach a string of 8 x 10 floats from the abutment at the shoreline to the pier. 250 cubic yards of fill would be required to allow for a comfortable slope (3:1), while walking along the floats at low tide. A Department of Environmental Protection permit would be required for the fill material. This system of floats would cost $74,000.

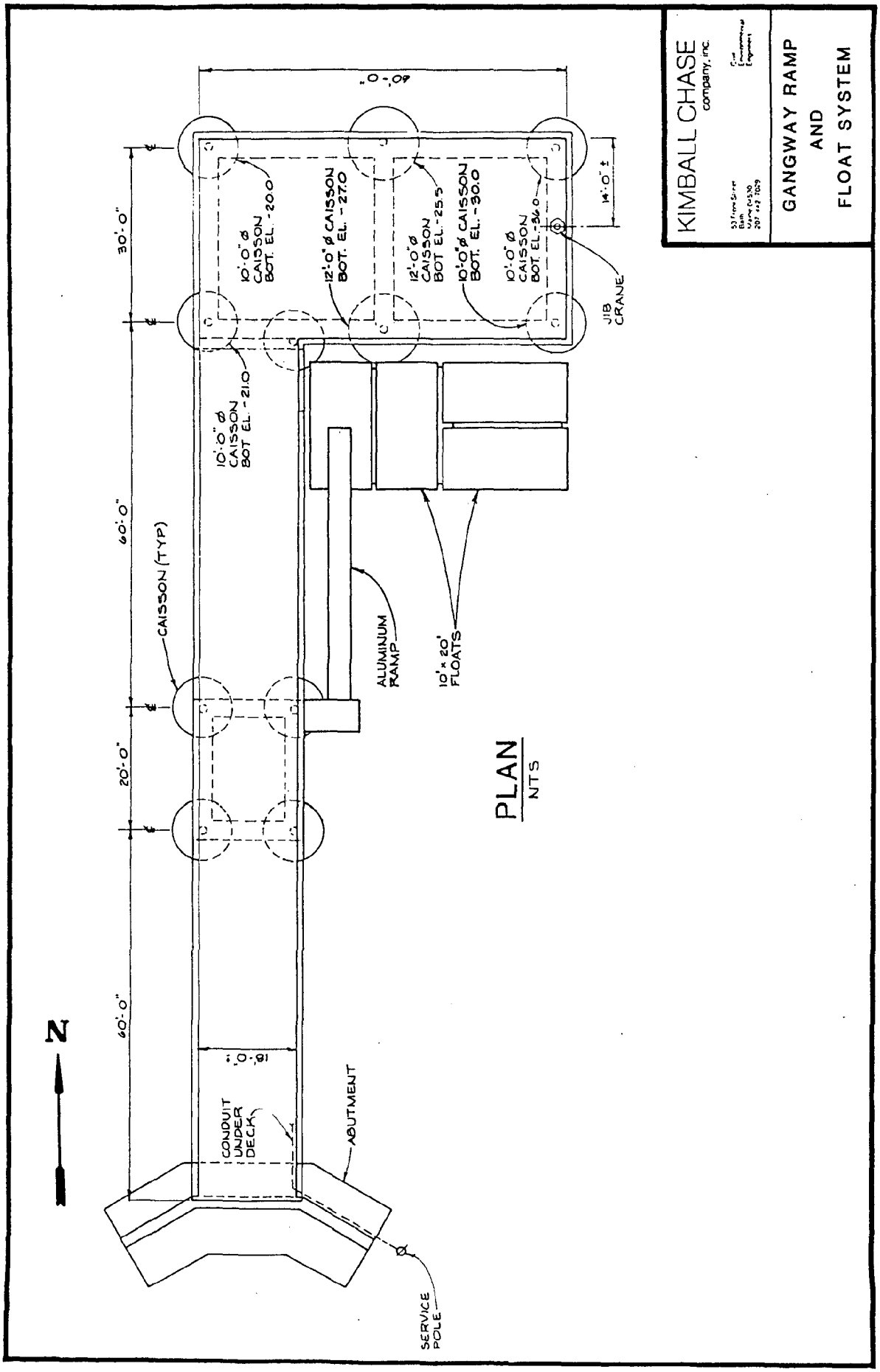

KIMBALL CHASE
company, inc.
GANGWAY RAMP
AND
FLOAT SYSTEM
10'-0" ø CAISSON BOT. EL. -20.0
12'-0" ø CAISSON BOT. EL. -27.0
12'-0" ø CAISSON BOT EL. -25.5
10'-0" ø CAISSON BOT. EL. -30.0
10'-0" ø CAISSON BOT. EL. -34.0
10'-0" ø CAISSON BOT EL. -21.0
JIB CRANE
14'-0" ±
30'-0"
60'-0"
20'-0"
60'-0"
CAISSON (TYP)
ALUMINUM RAMP
10' x 20' FLOATS
PLAN
NTS
N
CONDUIT UNDER DECK
ABUTMENT
SERVICE POLE



FIGURE 12

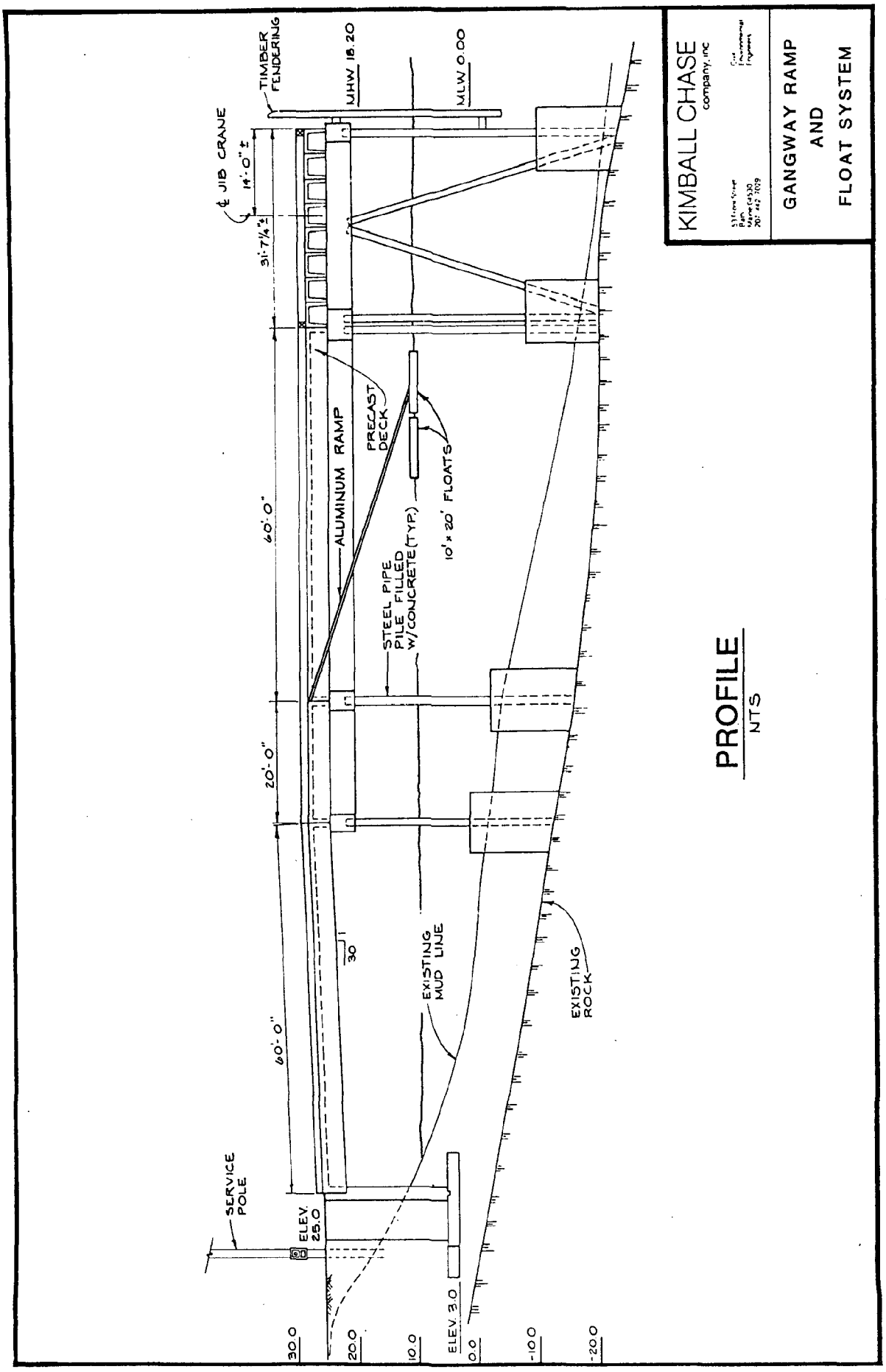

KIMBALL CHASE
company, inc
GANGWAY RAMP
AND
FLOAT SYSTEM
PROFILE
NTS
TIMBER FENDERING
MHW 18.20
MLW 0.00
℄ JIB CRANE
14'-0" ±
31'-7¼" ±
60'-0"
ALUMINUM RAMP
PRECAST DECK
10' x 20' FLOATS
STEEL PIPE PILE FILLED W/CONCRETE (TYP.)
20'-0"
60'-0"
EXISTING MUD LINE
EXISTING ROCK
SERVICE POLE
ELEV. 25.0
ELEV. 3.0
30.0
20.0
10.0
0.0
-10.0
-20.0



FIGURE 13

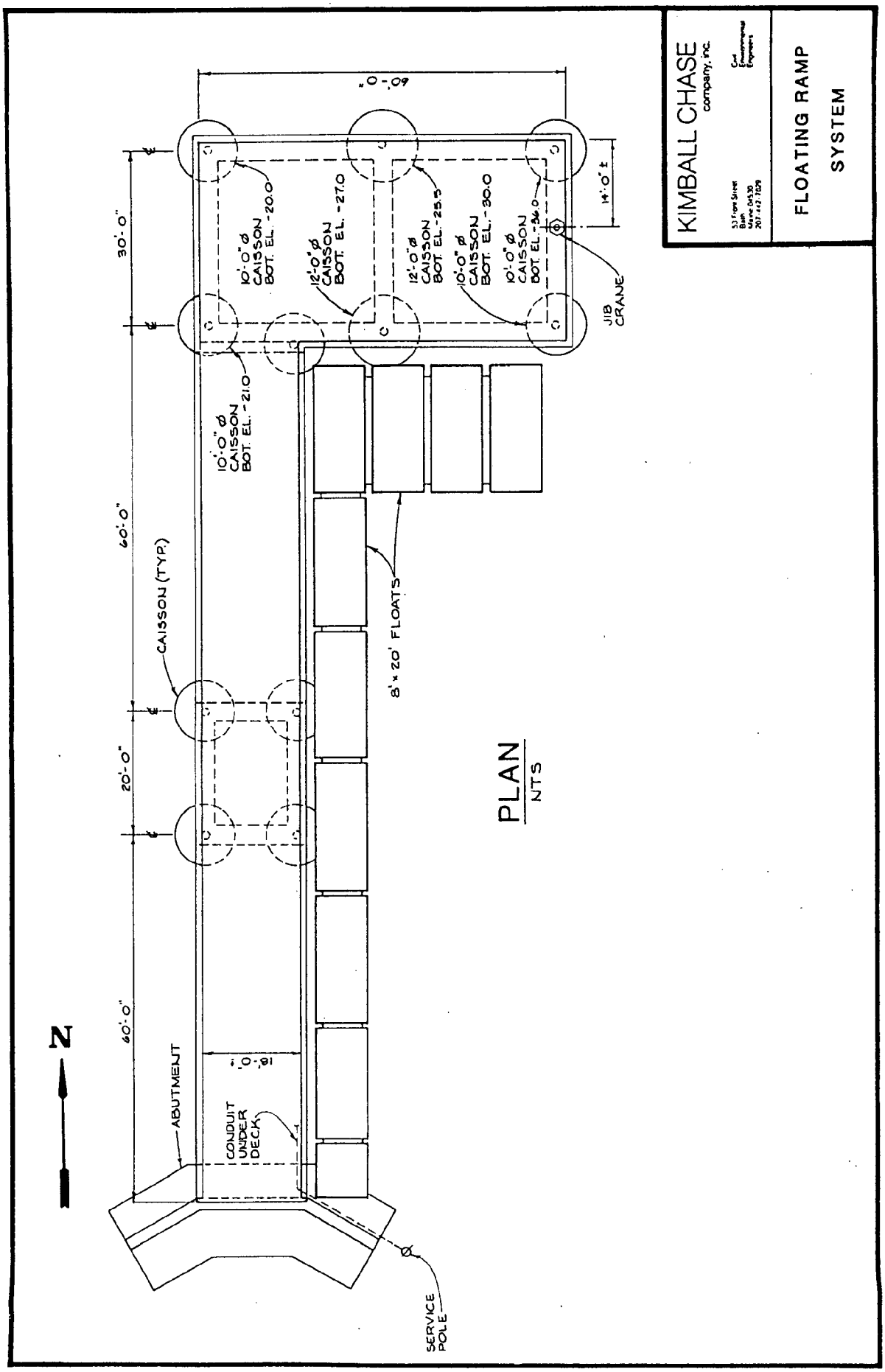

KIMBALL CHASE
company, inc.
FLOATING RAMP
SYSTEM
10'-0" ø CAISSON BOT. EL. -20.0
12'-0" ø CAISSON BOT. EL. -27.0
12'-0" ø CAISSON BOT. EL. -25.5
10'-0" ø CAISSON BOT. EL. -30.0
10'-0" ø CAISSON BOT. EL. -36.0
10'-0" ø CAISSON BOT. EL. -21.0
JIB CRANE
14'-0" ±
30'-0"
40'-0"
CAISSON (TYP.)
20'-0"
40'-0"
8' x 20' FLOATS
PLAN
NTS
N
ABUTMENT
CONDUIT UNDER DECK
SERVICE POLE



FIGURE 14

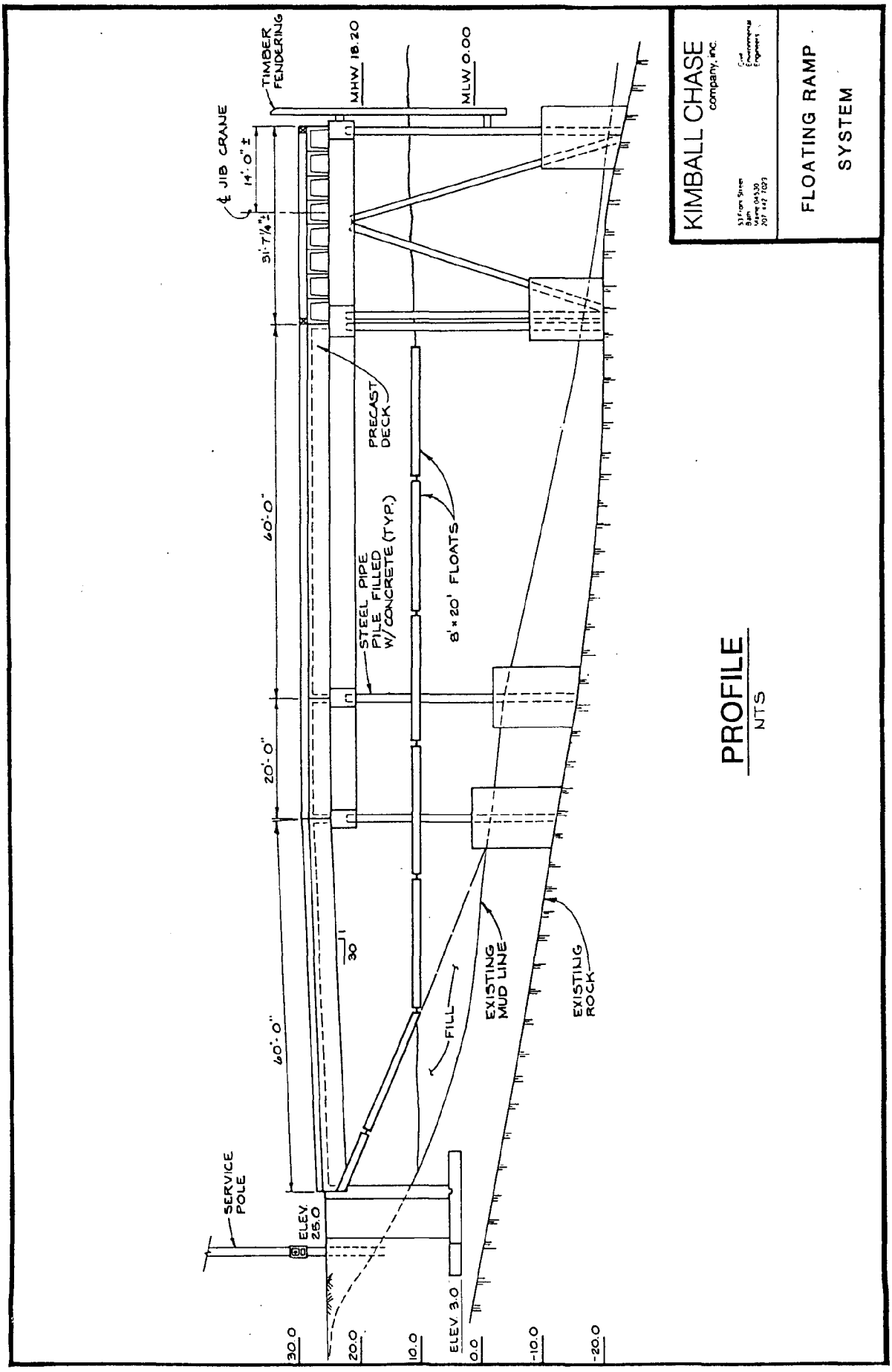

KIMBALL CHASE
company, inc.
FLOATING RAMP
SYSTEM
PROFILE
NTS
TIMBER FENDERING
MHW 18.20
MLW 0.00
℄ JIB CRANE
14'-0" ±
31'-7¼" ±
60'-0"
20'-0"
60'-0"
PRECAST DECK
STEEL PIPE PILE FILLED W/CONCRETE (TYP.)
8' x 20' FLOATS
1
30
EXISTING MUD LINE
FILL
EXISTING ROCK
SERVICE POLE
ELEV. 25.0
ELEV 3.0
30.0
20.0
10.0
0.0
-10.0
-20.0



FIGURE 15

Table 3

Cost Estimates for Float System

Aluminum Ramp and Floats

| | |
|---|---|
| 3 Floats | $ 15,000 |
| Special Float for Gangway Ramp | 4,500 |
| Float Connectors | 2,800 |
| Pier Connectors | 1,800 |
| Ramp Connectors | 5,000 |
| Aluminum Ramp | 12,500 |
| Subtotal: | $ 31,600 |
| Contingency: | 4,000 |
| Engineering: | 5,800 |
| Total: | $ 41,400 |

Floating Ramp

| | |
|---|---|
| Concrete Shore Block | $ 6,250 |
| Fill Material | 8,100 |
| Pavement & Curb | 4,750 |
| Piles | 3,500 |
| Floats | 25,000 |
| Float Connectors | 8,900 |
| Subtotal: | $ 56,500 |
| Contingency: | 8,500 |
| Engineering & Permitting: | 9,000 |
| Total: | $ 74,000 |

Dredging

The need for dredging is evident when visiting the pier at low tide. Currently, the area where boats berth along the inner side and the west side of the pier is obstructed by granite blocks and the existing bottom at low tide. The available water depth on the east and west sides of the pier is currently ten (10) feet. With the completion of dredging, the available water depth would increase to eighteen (18) feet at mean low water. With this increase in depth, larger vessels would be able to tie up to the west side of the pier and use the electric hoist located on the eastern side. Dredging the east side (2,600 cubic yards) would cost approximately $52,900. Dredging the west side (5,600 cubic yards) would cost an additional $79,800 if done at the same time

as the west side. If done separately, the dredging of the west side would cost $88,500. The areas to be dredged are shown by Figure 16.

Jib Crane

The current jib crane is located on the eastern face of the pier. It has a one (1) ton lifting capacity, an underclearance of ten (10) feet, and a boom length of eight (8) feet. Currently the jib crane is not used because of its location, being inaccessible to the tractor trailer trucks, and its small lifting capacity. The need for a new larger jib crane is demonstrated by Nordic Enterprizers, a salmon farming outfit. Nordic Enterprizers receives their smolt in one and one half (1-1/2) ton containers. These containers, due to their weight and size, have to be lowered to ships at high tide using a backhoe instead of the jib crane. With an additional jib crane, loading could be accomplished at all stages of tides instead of waiting for the next high tide and an available backhoe. The new crane would be located on the northwest corner of the pier. The design, purchase, and installation costs of a two (2) ton jib crane with a fifteen (15) foot span and an electric hoist would be $20,000. (See Appendix A for a typical jib crane of the recommended size).

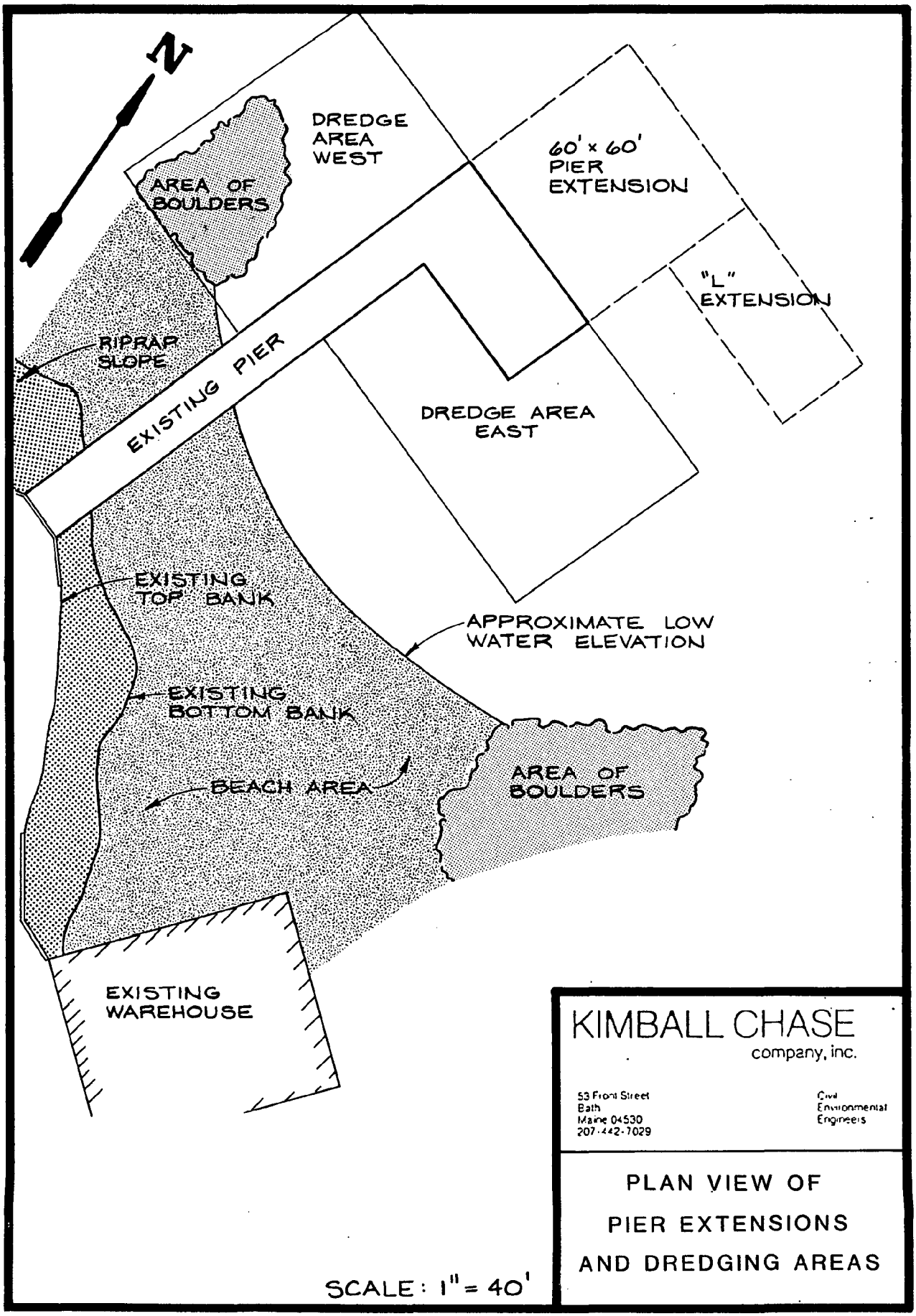
Engineering Costs For Pier Extensions

Two pier extensions have been discussed in Town planning for the pier, see Figure 16. The first extension would be a 60 x 60 square section extending northerly. Assuming the same type of construction for the new extension as the existing pier, the estimated cost of this extension would be $1,118,000. Using the Bureau of Public Improvements publication, Engineering Projects, Schedule of Recommended Fees the following engineering design costs have been estimated:

Ports & Harbors with Complex Design Considerations = C-Rate

C-Rate for Projects Between $1,000,000 and $1,500,000 = 6.9

$1,118,000 x 0.069 = $77,142 use $80,000




KIMBALL CHASE
company, inc.

53 Front Street
Bath
Maine 04530
207-442-7029

Civil
Environmental
Engineers

PLAN VIEW OF
PIER EXTENSIONS
AND DREDGING AREAS

Subsurface Examination:

| | | |
|---|---|---|
| Mobilization | $ 3,000 | |
| Borings (9 to a depth of 40') | 5,400 | |
| Rock Core (1 to a depth of 40') | 1,200 | |
| Tubes (10) | 350 | |
| Geotechnical Services (Report, Lab, & Expenses) | 4,500 | |
| Subtotal | $14,450 | |
| Contingency (10%) | 1,445 | |
| | $15,895 | Use $16,000 |

Estimated Total Design Costs $96,000

The estimated second pier extension would be a 60' x 28' rectangular extension. This extension would project easterly from the 60 x 60 extension, thus forming an "L". Again assuming the same type of construction, the cost would be $654,000. The engineering design cost of $62,000 has been estimated as follows:

Ports & Harbors with Complex Design Considerations = C-Rate

C-Rate for Projects Between $600,000 and $700,000 = 7.9

$654,000 x 0.079 = $51,666 use $52,000

Subsurface Examination:

| | | |
|---|---|---|
| Mobilization | $ 3,000 | |
| Borings (4 to a depth of 40') | 2,400 | |
| Rock Core (1 to a depth of 40') | 1,200 | |
| Tubes (5) | 175 | |
| Geotechnical Services (Report, Lab, & Expenses) | 2,250 | |
| Subtotal | $ 9,025 | |
| Contingency (10%) | 900 | |
| | $9,925 | Use $10,000 |

Estimated Total Design Costs $62,000

SECTION 6

## PIER & HARBOR MANAGEMENT PLAN

### Plan Objectives:

The Harbor Management Plan will be administered by the Board of Selectmen and enforced by the Harbor Master. Appendix B shows the overall limits of Lubec with the proposed lines which outline the harbor channel and mooring area. The Harbor Management Plan describes the goals of how the harbor should be managed. Important goals would be:

- clear movement of all boats in and out of the harbor;
- adequate space for boats to maneuver and moor;
- provide a safe harbor during storms;
- make available the needed supplies to all boats;
- provide for the orderly development of the harbor;
- promote existing activities and improve them;
- and recommendations on control of future increases in the number of boats.

The Harbor Ordinance provides the rules and regulations by which the Harbor Management Plan is implemented. Some of the key aspects include:

- clear and concise definitions of all terms;
- designation of channels and passageways;
- designation of the anchorage;
- and adoption of a mooring plan standards for moorings.

### Review of Existing Ordinance

Lubec's existing ordinance, effective January 1980, is thorough and addressed many issues (Appendix C). Based upon a detailed review of Lubec's existing ordinance the following suggestions have been made. These suggestions are offered to assist in addressing changing issues and to bring the ordinance format in line with current thinking. A revised Harbor Ordinance is included as Appendix D.

I. Purpose

The Harbor must be kept open for navigation and other purposes by rules of the Corps of Engineers, Department of the Army. Pursuant to the provisions of the Maine Revised Statutes Annotated (MRSA), Title 38, Section 2, the following rules and regulations are hereby enacted. It is intended that these will provide the needs

by which the Lubec Harbor area will be developed to its fullest for providing equal access without limiting the capacity.

II. Characteristics

The Lubec Harbor area, which is defined in detail by Section D of the Harbor Use regulations, is situated at the eastern most point of the State of Maine. The Lubec Harbor area is sheltered from most winds, except winds from the northeast and northwest. Northwest winds provide the direction from which winds and waves create a problem for the majority of the harbor area. The range in tides for the Lubec area is from 14 feet to 25 feet, with a mean rise of 18.1 feet.

III. Definitions

It is recommended that obstruction be added to the list of definitions.

Obstruction - A mooring, boat, float or any object which impedes navigation is defined as an obstruction.

IV. Moorings

The following list of mooring standards should be added as D.5.c. in the Lubec Harbor Ordinance.

Boat moorings shall, at a minimum, comply with the following:

| Length, Boat, Max | Chain Size | Mushroom Weight | Granite Weight | Pennant Length | Pennant Strength |
|---|---|---|---|---|---|
| 15' | 5/16" | 100 lbs. | 2,000 lbs. | 4' | 400 lbs. |
| 20' | 3/8" | 150 lbs. | 2,000 lbs. | 8' | 600 lbs. |
| 25' | 3/8" | 200 lbs. | 4,000 lbs. | 10' | 800 lbs. |
| 30' | 1/2" | 300 lbs. | 6,000 lbs. | 10' | 1,200 lbs. |
| 35' | 1/2" | 350 lbs. | 6,000 lbs. | 10' | 1,400 lbs. |
| 40' | 5/8" | 400 lbs. | 6,000 lbs. | 10' | 1,600 lbs. |
| 45' | 5/8" | 450 lbs. | 6,000 lbs. | 10' | 1,800 lbs. |
| 50' | 5/8" | 500 lbs. | 6,000 lbs. | 10' | 2,000 lbs. |

Chain length required is a 3 to 1 scope of water depth at Mean High Water. Mushroom or granite anchor may be used.

On-Shore Service Facilities

Access to the Lubec commercial pier is provided by Commercial Street, a 16 foot wide bituminous paved roadway. Approaching the pier from the east is recommended as the roadway grade and condition are better than the conditions on the western section of Commercial Street.

Currently there are several areas for parking near the commercial pier. These areas include:

- 4 gravel spaces on the northern side of Commercial Street just easterly of the pier.
- 4 gravel spaces located on the southern side of Commercial Street westerly of the pier. Currently these spots are blocked from use by barrier stones.
- The parking area at the public marina.

Any current parking demands can be met by the 4 available spaces with some overflow using the public marina parking area. Future needs for parking could be accommodated by removing the barrier stones to allow for use of the spaces to the west of the pier.

Three (3) electrical outlets currently exist on the pier. There are two (2) 230 volt outlets. One being a 20 amp outlet and the other being a 30 amp outlet. The remaining outlet is a 120 volt, 20 amp. All outlets are easily accessible. The outlet power is controlled by a circuit breaker panel located on shore. Currently the electricity is shutoff and the electrical panel is in need of repair or replacement.

A public telephone does not exist at the commercial pier. Concern has been raised in the needs for a telephone. These concerns include, the need for safety reasons, fuel ordering, and general convenience. A telephone was deleted from the original plans because of the potential for vandalism and the lack of anticipated use.

A fuel dispensing system is not permanently located at the commercial pier. Gasoline and diesel fuel will be delivered by tank truck to the pier by a local supplier. This system works well and would be capable of handling any projected increase at the commercial pier.

Neither water nor ice is available at the commercial pier. The demand for water has not been demonstrated at the pier. Fresh water can be obtained at several locations, including the R.J.

Peacock Canning Company and saltwater is used for the washdown of boats currently using the pier. Ice can be purchased on the spot market when available in Lubec and Eastport, Maine and Deer Isle, New Brunswick.

## Mooring Plan

Considering the vastness of the Harbor area, an excellent mooring area, the many access points to the Harbor area and the need for a Harbor Master to control, a central mooring area has not been recommended. It is recommended that all moorings and locations be approved by the Harbor Master prior to the setting of a mooring. This is to insure that the mooring meets minimum mooring standards, an infringement upon existing moorings does not occur and that all navigational channels are kept open. The Harbor Master should also keep a map of all existing moorings.

## Review of Existing Mooring Application

The existing mooring application, adopted in 1980, is included as Appendix E. The application is a simple one (1) page form which is used by the Harbor Master for recordkeeping purposes. With the addition of several recommended standards to the Harbor Ordinance, additional information would need to be obtained from applicants requesting a mooring location. A recommended application for mooring location is included in Appendix F.

Upon receiving an application for mooring location, the Harbor Master would check the application against applicable ordinances. Then, if all ordinances had been met, the Harbor Master would issue a permit (see Appendix F) for mooring location.

## Review of Existing Fee Schedule

The Lubec commercial pier and harbor fees ordinance was adopted January 1, 1980 (see Appendix G). The ordinance addressed all pertinent matters. All fees are reasonable and customary for this area of Maine.

Concern has been voiced for the salary of the Harbor Master. Currently the Harbor Master earns $25 per year. This figure is in line with several towns in Washington County (i.e. Cutler and Machiasport). This figure is very low compared to neighboring Eastport where the Harbor Master receives $1,200 per year plus 20% of any fees he collects.

For better enforcement of the Harbor rules, regulations and fees, the Town of Lubec should look to increase the Harbor Master's salary. There are two ways to accomplish this, one being to increase the base salary and the other to arrange a percentage of the collected fees to be paid to the Harbor Master. Increasing the Harbor Master's salary by a percentage of the collected fees is the most logical way. If the Harbor Master receives a percentage of the collected fees, the harder he works, the more he gets paid. For these reasons, it is recommended that the Harbor Master receive an increase in pay equivalent to twenty percent of the fees he collects.

Future Considerations

Although not presently needed, the following would be useful as Harbor use and Harbor related activity increases in Lubec:

a. Harbor Master Building - This small building should be located at the public marina. It would be used as a central location for control of the Harbor. It could be equipped with a pay telephone and a bulletin board for the posting of Harbor rules, regulations, and public notices.

b. Assistant Harbor Master - This position would be a part-time or full-time summer assistant. The Assistant Harbor Master's duties would include: working as a liasion between the Town and recreational boaters, collecting fees, enforcement of Harbor rules and regulations, and the cleaning/maintenance of town owned facilities.

c. Harbor Master Boat - This boat would be used by the Harbor Master or his Assistant in the performance of the duties of Harbor Master.

Minor Repair Items

The following is a list of minor repair items which should be done by the Town as soon as possible to allow for utilization of the existing pier:

| | Description | Cost |
|---|---|---|
| 1. | Clean/Sweep Pier Deck | No Cost (Town Crew) |
| 2. | Repair Ladders<br>a. Straighten<br>b. Stiffen<br>c. Paint | $1,600 |
| 3. | Repair Electrical Panel & Box | $1,000 |
| 4. | Remove Gangway Ramp | No Cost (Town Crew) |

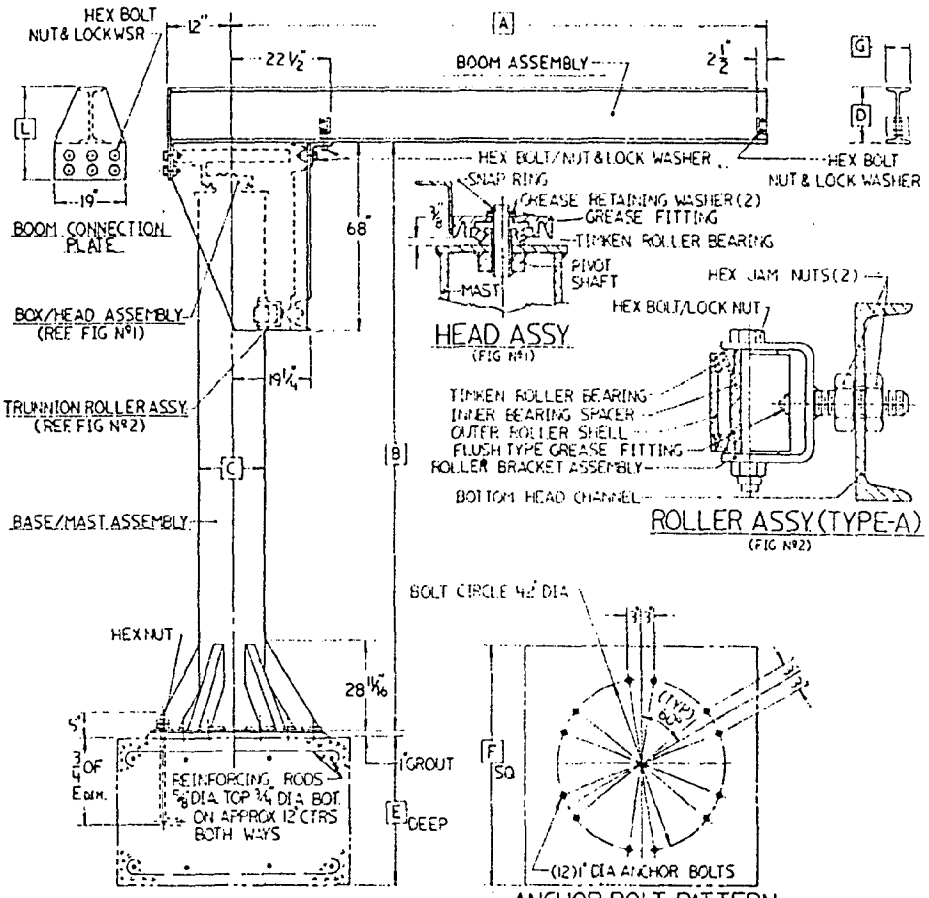
Schedule for Pier Revitalization

| Year | Description | Cost |
|---|---|---|
| 1987 | Enact Revised Harbor Ordinance | No Cost |
| | Minor Repair Items | $ 2,600 |
| 1988 | Design, Permit, & Install Floating Ramp System | 74,000 |
| | Dredging | 132,700 |
| | Design Sheathing | 22,000 |
| | Add Bow & Stern Cleats | 1,500 |
| | Jib Crane | 20,000 |
| 1989 | Construct Sheathing | 230,000 |
| | Subsurface Examination | 16,000 |
| | Preliminary Design for Pier Extension | 20,000 |
| 1990 | Final Design & Permitting for Pier Extension | 60,000 |
| | Funding for Pier Extension | No Cost |
| 1991 | Construction of Pier Extension | 1,118,000 |
| | Subsurface Examination | 10,000 |
| | Preliminary Design of "L" Extension | 15,000 |
| 1992 | Final Design & Permitting for "L" Extension | 37,000 |
| | Funding for "L" Extension | No Cost |
| 1993 | Construction of "L" Extension | 654,000 |

# APPENDIX A

JIB CRANE

# FREE STANDING JIB CRANE 360° ROTATION
# BASE PLATE MOUNTED MOD.-100- 1615 1510




RECOMMENED CONCRETE:
# 3000 PSI COMPRESSIVE CONCRETE

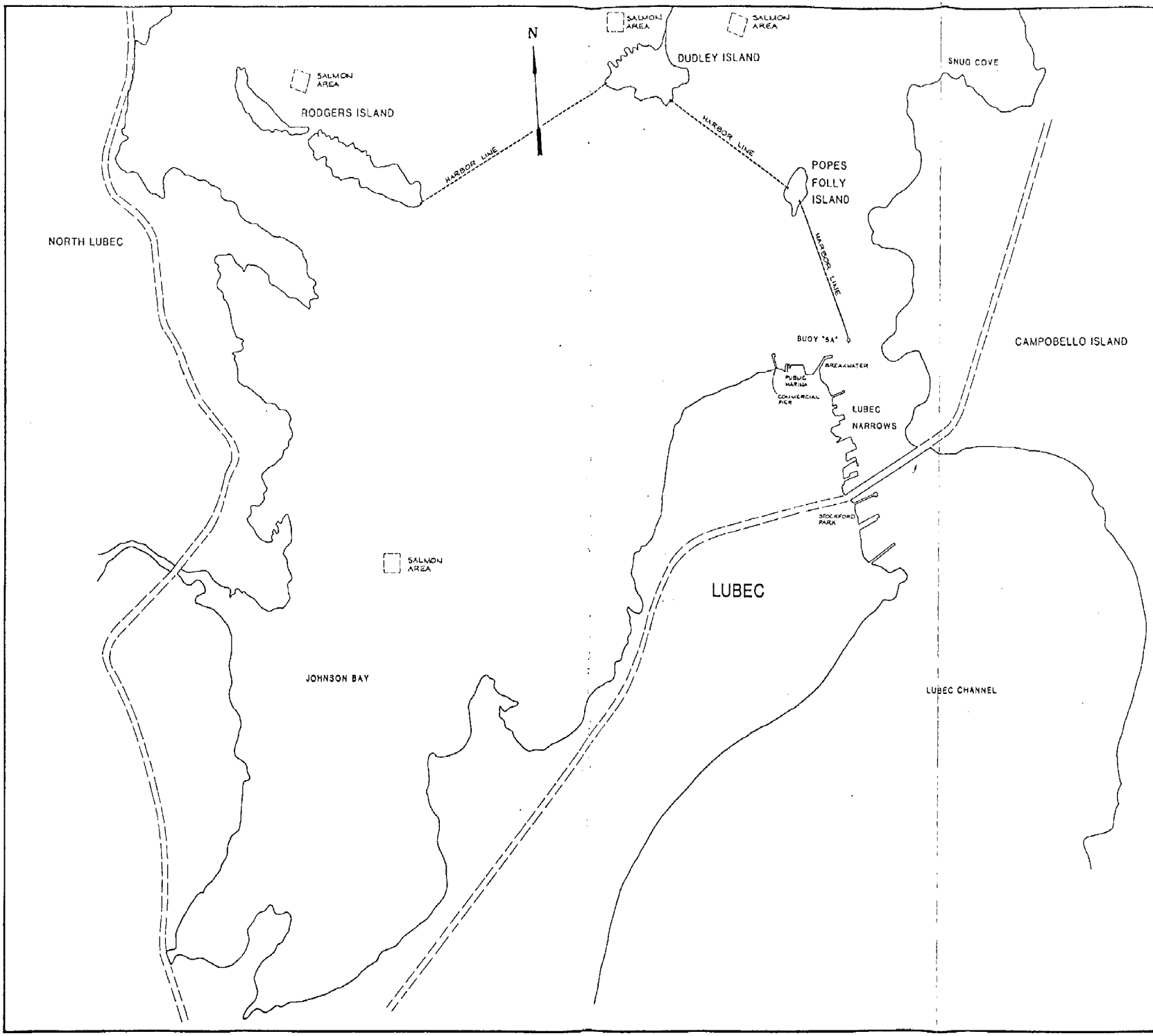
BASE PLATE DIAMETER 8" LARGER THAN BOLT CIRCLE
ANCHOR BOLT & TEMPLATE SUPPLIED UPON REQUEST

| MODEL-100- | C | D | G | L |
|---|---|---|---|---|
| 1610 | 16" | 10" | 4 5/8" | 20" |
| 1612 | 16" | 12" | 5" | 22" |
| 16X12 | 16" | 12" | 5" | 22" |
| 1615 | 16" | 15" | 5½" | 25" |
| 16X15 | 16" | 15" | 5½" | 25" |
| 1618 | 16" | 18" | 6" | 28" |
| 16X18 | 16" | 18" | 6" | 28" |
| 1620 | 16" | 20" | 6¼" | 30" |

SHANCO INC. DOWNINGTOWN PA REV 11-29-86 DIM SHEET SD-06-01

# APPENDIX B

LUBEC HARBOR AREA




LUBEC HARBOR AREA

PIER REVITALIZATION STUDY
LUBEC, MAINE

KIMBALL CHASE Company, Inc.

APPENDIX B–

# APPENDIX C

RULES & REGULATIONS

TOWN OF LUBEC

RULES AND REGULATIONS

PERTAINING TO THE HARBOR, PORT, AND CHANNELS

WITHIN THE TOWN OF LUBEC

EFFECTIVE JANUARY 1, 1980

Definitions:

Berth - The place where a ship lies when at anchor or at a wharf.

Channel - Areas of the harbor kept open for navigation or other purposes by rule or regulation of the Port Authority, the Department of the Army, or other regulatory body.

Dock - The slip or waterway extending between two piers or projecting wharves or cut into the land for the reception of vessels.

Float - A platform that floats or is anchored, moored, or secured at or near the shore, used for landing or other purposes.

Harbor - The harbor shall include the tidal waters within the geographical limits of the 5A buoy off the breakwater to Popes Folly Island, Dudley Island, Rogers Island, thus all of Johnson Bay.

Harbor Master - An officer appointed and employed by the town of Lubec to oversee the jurisdictional area of the Town, with power to make arrests.

Landing - A place for landing or discharging things or people from a vessel.

Mooring - A permanent, adequate means of securing a boat to the bottom of an anchorage.

Pier - A breakwater or mole extending into the Harbor for use as a landing place, a promenade, or to protect to form a Harbor; a structure built out into the water with piles for use as a landing place.

Port - The port includes the commercial pier, the marina, together with all now known landings and any other public landings or wharves that might be acquired by the Town of Lubec.

Vessels - Vessels shall include boats of all sizes, propelled by sails, machinery, or hand; scows, dredges, shell fish cars, and craft of any kind.

Wharf - A structure of timber, masonry, or cement, or earth or other material, built on the shore of a harbor, river, or canal, or the like, especially one extending parallel to the shoreline, so that vessels may lie close to receive and discharge passengers and cargo.

Marina - A dock or basin providing dockage, supplies, and services to small recreational craft.

HARBOR USE REGULATIONS

A. Speed of vessels, reckless operation; vessels shall be operated in the harbor at a reasonable speed and in such a manner as not to endanger craft, people, or property. Vessels shall be operated so they do not create an excessive or damaging wake. Vessels must be operated at no more than 5 mph within 100 yards.

B. Channels; channels for the passage of boats shall be maintained in the area under the jurisdiction of the Port Authority and shall be clear of any and all obstructions.

1. The Lubec Channel and the Lubec Narrows are between Quoddy Roads and Friar Roads.

The southwesterly entrance is past the West Quoddy Head Light through Quoddy Roads, the Middle Grounds to the Lubec Channel and the Lubec Narrows. A fairway bell buoy marks the entrance to Quoddy Roads and the approach to Lubec Channel. The Channel is marked with three red numbered buoys, numbers 2, 4, and 6, three black can buoys numbered 1, 3, and 5, and the Lubec Channel Light, which also has an audible fog horn. Lubec Narrows has strong tidal currents and eddies. One should not use this passage without local knowledge. At the red buoy number 2, on a clear day, the Lubec standpipe is to the north westward, the steeple on the Congregational Church and the chimney on the former "Puss and Boots" plant are visible to the north. The steeple is equipped with floodlights and is visible at night.

Shoals are bare on both sides of the Lubec Narrows at low tide. A breakwater extends form shore point on the west side of the Channel about 300 yards northward of the southern end of the Narrows. Another breakwater extends from the shore to Gun Rock and 75 yards eastward of the rock on the west side of the Narrows. This breakwater has a white pyramid near the eastern end. This breakwater is covered by and during extremely high tides. There is a ledge about 150 yards north easterly from Gun Rock covered with 7 feet of water at low tide and is marked on its north end by a can buoy numbered 7. Directly to the east of

Gun Rock are some very large rocks, which are almost exposed on mean low water. These conditions are marked by a large black buoy numbered 5A. Boats should pass to the east of this buoy.

The northern entrance to the Lubec Narrows is through Friars Roads between Treat Island and Dudley Island on the northwest, and Friar Head on the east, and past Popes Folly Island on the southwest.

The Franklin D. Roosevelt Memorial Bridge crosses the Lubec Narrows at a point about 400 yards southward of the abandoned lighthouse on Mulholland Point. Chart C. & G.S. 801 hives a vertical clearance of 47 feet at mean high water.

Johnson Bay, on the northwest side of Lubec, is a seasonal and frequently used anchorage. The approach from the southward is through Quoddy Roads, Lubec Channel and Lubec Narrows. The northward approach is through Friar Roads. The best anchorage for deep draft vessels is just southward of a line from the abandoned lighthouse on Mulholland Point to Rogers Island northwest of Lubec. The range of tides in the Lubec area is from 14 feet to 25 feet, with a mean rise of 18.1.

Existing moorings are all private. They are located off the old Colubian factory, off the old Globe factory, and in the Rogers Island thoroughfare.

Town owned moorings are planned in the same area for transient vessels.

There is a state boat launching facility for small pleasure craft located at the east end of the entrance to Johnson Bay, next to the breakwater at the north end of the Lubec Narrows. This boat launching facility has a concrete ramp for boats on trailers and also has 16 wooden floats. Eleven floats are used to assist in launching, and five floats moored east to west provide short term docking facilities for small pleasure craft to load and unload. No long time tieups to the floats are permissible. There is a paved parking area for cars and boat trailers.

The commercial pier is located adjacent to the west of the state boat launching facility. This pier provides loading and unloading facilities for commercial fishing vessels, tie up privileges, refueling available, telephone, and access to Town facilities.

C. Anchorage; vessels shall be anchored in the harbor in such places or areas as the harbor master shall direct. The harbor master may at any time order any vessel at anchor to change position when in his opinion such vessel is so anchored as to impede navigation or to endanger other vessels.

D. Moorings; these regulations are promulgated to meet the U.S. Army Corps of Engineers requirements for federal anchorages and title 38, Maine Revised Statutes (M.R.S.A.), Section 2 as amended.

1. All moorings space will be under the exclusive control of the Harbor Master and must be assigned on a first come first served basis, from an established list of boat owners maintained by the harbor master. Application permits for a mooring shall be requested annually from the Port Authority. The Port Authority shall review this application permit with regard to space available for the type of boat so indicated. Upon approval of the Port Authority it is the responsibility of the applicant to submit the approved application permit to the Town Clerk together with all fees due. The applicant will then present the mooring application permit as receipted by the Town Clerk to the harbor master who will assign a registration number and location for such mooring and advise the applicant concerning the requirements of these rules and regulations. The individual has the option of renting the hardware at a negotiated fee or providing his own hardware. Approved mooring application permits are not transferrable without reapplication.

2. Marinas or any individual shall not control or assign any mooring space except to rent mooring hardware to the assignee on request. At the termination of assignment of any mooring space to an individual, the mooring hardware will be removed unless the new assignee indicates his option to utilize the existing hardware.

3. Owner of moorings shall be libel for any and all fees due the Town of Lubec resulting from usage of their moorings.

4. The harbor master shall, insofar as the same may be done consistently with these rules and regulations and with due regard for the safety of other vessels and of navigation, give consideration to the choice of the applicant. However, where mooring rights of the individuals are claimed to be invaded and protection is sought of the harbor master, he shall assign and indicate to the masters or owners of the vessels the location which they may occupy for said mooring, and he shall assign mooring privileges in all cases where individuals who own or have an interest in the shore rights are complaints, and shall locate suitable mooring privileges temporarily or permanently, fronting their lands if so requested, but not so as to encroach upon the natural channel or channels established by this authority.

5. Adequacy of moorings; all existing moorings hereinafter to be set shall be of sufficient size to hold the vessel for which it is used. An "adequate mooring" under this section shall conform to the following requirements:

a. All moorings shall have been approved with the registration number assigned by the high and shall be clearly visible at all times. The harbor master may at any time examine any mooring or mooring line to determine compliance with this section, except in cases of emergency, he shall notify the owner of his intention to examine the moorings and request the presence of the owner during such examination. Moorings found to be inadequate with regards to the requirements of this section shall be corrected within 24 hours or removed. Any cost of examination or removal resulting therefrom shall be borne by the owner of the mooring.

b. During the period form May 15 to October 15, no mooring shall be in excess of 40 feet in length from the anchor or block to the stem of the vessel and top lines shall be limited to 1/2 the length of the boat, except by written permission of the harbor master.

6. Vessels moored so as to impede Navigation or endanger other vessels; All moorings whether now existing or hereinafter set shall be so located or relocated that the vessels secured thereby will not impede navigation within the harbor nor endanger other vessels moored therein. If the harbor master shall find that any vessel is so moored as to as to impede navigation or to endanger other vessels he may require that the owner of the mooring or the vessel secured thereby take such steps, whether by shortening the scope of the mooring lines or by the use of additional mooring lines or mooring, as will prevent such impeding of navigation or endangering of other vessels. Or in the alternative he may order that the mooring be removed and relocated in the manner described in section D4. In requiring the removal of a mooring because of the danger to other moorings, the mooring last set shall be the ordered to be removed. Any person so ordered by the harbor master acting under this paragraph shall remove the same within 48 hours after ordered; provided however that if the harbor master shall find that an emergency requiring immediate action to prevent injury to life or damage to property, he may cause said mooring or any vessel attached thereto to be removed and relocated. Any expense involved shall be borne by the owner of the mooring or vessel being removed.

7. Moving or interfering with moorings belonging to another; except by direction of the harbor master or with permission of the owner, no person may move or interfere with any vessel in this harbor.

8. Courtesy moorings; courtesy moorings are provided for the use of visiting vessels. Such vessels may use these moorings for a period of no longer than 24 hours, except under unusual circumstances with express permission of the harbor master.

9. All boat owners who have not renewed their float or mooring assignment with the harbor master by May 1 of each year will be considered as abandonment of their assignment. Accordingly, the harbor master will make new assignments from the "standard mooring list" or "float list" as applicable.

E. Buoys other than for mooring vessels; no buoy of this type shall be placed in channels leading to wharves, nor shall such buoys by placed within three vessel lengths from a mooring for that vessel. The harbor master is empowered, in the interest of public safety, to require the removal of any buoys.

F. Public wharves and landings:

1. Obstruction; no person shall obstruct by any means whatsoever the free use of piers, docks, and other public landing places. The town wharves shall be used only for loading or unloading. Vessels shall not remain moored to the wharf or float for a period longer than reasonable necessary for this purpose, except by permission of the harbor master. The harbor master shall remove or cause to be removed any unattended vessel obstructing free use of the piers, docks, or other public landing places, after due effort has been made to notify the master or owner of said vessel of the above violation.

2. No person shall loiter, create a public nuisance, or partake of alcoholic beverages on town wharves or landings. Town wharves or piers may be closed form 11 p.m. to 5 a.m. by the Police Department when it is warranted by acts of vandalism or disturbance of the peace.

3. Swimming and fishing; no person shall dive from, swim, or skin dive without permission of the harbor master, within 30 feet of town-owned floats. No person shall fish from town-owned floats.

   a. All dinghies, skiffs, or tenders tied to town-owned floats shall allow at least 10 feet of line between the boat and the float.

   b. No boat more than 12 feet in length shall be tied to a town-owned float except for loading and unloading.

4. Storage; personal property such as lobster traps, bait, automobiles, cradles, boats, floats, etc., shall not be stored on town wharves or landings. Exceptions to this rule shall be considered on an individual basis when submitted in writing to the Port Authority. The designated loading zone shall be used for lobster traps, fishing gear, and items in transit.

5. Construction; no additions, alteration, new construction or changes to existing structures at any wharf, pier, or landing shall be made without prior permission of the Port Authority. Permission for the construction of any new wharves or piers within the jurisdictional limits of the Port Authority shall not be granted without approval of the Port Authority.

G. Waste and refuse; no person or vessel shall deposit, throw, sweep, or cause to be deposited or swept into the waters of Lubec, or into waters adjacent thereto, any gas or oil or bilge water containing same, ashes, stones, gravel, mud, logs, planks, or any other substance tending to obstruct the navigation of said harbor or waters adjacent thereto, or to shoal the depth of said harbor or pollute the waters thereof. No trash or refuse shall be placed on any town float or pier except in designated containers.

HARBOR MASTER

The harbor master shall enforce the rules and regulations pertaining to harbors and tidal waters under the jurisdiction of the Lubec Port Authority as promulgated by the authority, and shall cooperate with other government agencies in enforcing their regulations. He shall, under the supervision of the Authority, oversee the jurisdictional area of this authority, preserve and regulate navigation within said removal of vessels, if necessity or emergency requires, inquire into and prosecute all offenses occurring within and shall perform such other duties as the authority may prescribe. The harbor master's appointment may be revoked at any time by the Authority for cause. Each harbor master shall be appointed for a term of one year, his qualifications, salary, and expenses to be determined by the authority. The harbor master shall be empowered to make arrests for offenses under the provisions of the regulations as other peace officers are authorized to do.

Penalty

Whoever violates any of these rules or regulations or refuse or neglects to obey the lawful and reasonable orders of a harbor master, or resists him in the execution of his duties, shall be punished by a fine of not more than $50.00.

WATER SKIING, SKIN AND SCUBA DIVING, AND AIRCRAFT

A. Vessels towing water skiers and aquaplanes; there shall be no water skiing in congested moorings, anchorages areas or in speed limit areas. Water skiing shall be governed by the appropriate rules and regulation of the state. Except in connection with water carnivals and exhibitions as authorized by the Port Authority, no such activity shall be conducted between one-half hour after sunset and one-half hour before sunrise. Special water skiing areas may be designated by the Port Authority.

B. Water Ski jumps; no person shall locate for use on the public waters under the jurisdiction of this authority a water ski jump without first obtaining the approval of the Port Authority or its duly authorized representative.

C. Skin and scuba diving; skin and scuba divers shall be governed by the appropriate rules and regulations of the state.

D. Aircraft; aircraft shall be governed by the appropriate rules and regulations of the Maine Aeronautics Commission, excepting that they shall observe the same mooring and anchorage rules and regulations that apply to vessels.

FEDERAL REGULATIONS

Nothing herein shall be considered as conflicting with Federal laws applicable to the coastal waters and tidal waters and tidal rivers and harbors of the state.

EFFECTIVE DATE

These rules and regulations shall take effect on January 1, 1980, and shall remain in effect until altered or repealed by the Authority.

Authorized by the Selectmen of Lubec

Enforced by the Harbor Master and such law officers as required.

# APPENDIX D

RECOMMENDED RULES & REGULATIONS

# REVISED HARBOR ORDINANCE

TOWN OF LUBEC

RULES AND REGULATIONS

PERTAINING TO THE HARBOR, PORT, AND CHANNELS

WITHIN THE TOWN OF LUBEC

Purpose:

The Harbor must be kept open for navigation and other purposes by rules of the Corps of Engineers, Department of the Army. Pursuant to the provisions of the Maine Revised Statutes Annovated (MRSA), Title 38, Section 2, the following rules and regulations are hereby enacted. It is intended that these will provide the needs by which the Lubec Harbor area will be developed to its fullest for providing equal access without limiting the capacity.

Characteristics:

The Lubec Harbor area, which is defined in detail by Section D of the Harbor Use regulations, is situated at the eastern most point of the State of Maine. The Lubec Harbor area is sheltered from most winds, except winds from the northeast and northwest. Northwest winds provide the direction from which winds and waves create a problem for the majority of the Harbor area. The range in tides for the Lubec area is from 14 feet to 25 feet, with a mean rise of 18.1 feet.

Definitions:

Berth - The place where a ship lies when at anchor or at a wharf.

Channel - Areas of the Harbor kept open for navigation or other purposes by rule or regulation of the Port Authority, the Department of the Army, or other regulatory body.

Dock - The slip or waterway extending between two piers or projecting wharves or cut into the land for the reception of vessels.

Float - A platform that floats or is anchored, moored, or secured at or near the shore, used for landing or other purposes.

Harbor - The Harbor shall include the tidal waters within the geographical limits of the 5A buoy off the breakwater to Popes Folly Island, Dudley Island, Rogers Island, thus all of Johnson Bay.

Harbor Master - An officer appointed and employed by the Town of Lubec to oversee the jurisdictional area of the Town, with power to make arrests.

Landing - A place for landing or discharging things or people from a vessel.

Obstruction - A mooring, boat, float or any object which impedes navigation is defined as an obstruction.

Mooring - A permanent, adequate means of securing a boat to the bottom of an anchorage.

Pier - A breakwater or mole extending into the Harbor for use as a landing place, a promenade, or to protect to form a Harbor; a structure built out into the water with piles for use as a landing place.

Port - The port includes the commercial pier, the marina, together with all now known landings and any other public landings or wharves that might be acquired by the Town of Lubec.

Vessels - Vessels shall include boats of all sizes, propelled by sails, machinery, or hand; scows, dredges, shell fish cars, and craft of any kind.

Wharf - A structure of timber, masonry, or cement, or earth or other material, built on the shore of a harbor, river, or canal, or the like, especially one extending parallel to the shoreline, so that vessels may lie close to receive and discharge passengers and cargo.

Marina - A dock or basin providing dockage, supplies, and services to small recreational craft.

HARBOR USE REGULATIONS

A. Speed of vessels, reckless operation; vessels shall be operated in the Harbor at a reasonable speed and in such a manner as not to endanger craft, people, or property. Vessels shall be operated so they do not create an excessive or damaging wake. Vessels must be operated at no more than 5 mph within 100 yards.

B. Channels; channels for the passage of boats shall be maintained in the area under the jurisdiction of the Port Authority and shall be clear of any and all obstructions.

   1. The Lubec Channel and the Lubec Narrows are between Quoddy Roads and Friar Roads.

The southwesterly entrance is past the West Quoddy Head Light through Quoddy Roads, the Middle Grounds to the Lubec Channel and the Lubec Narrows. A fairway bell buoy marks the entrance to Quoddy Roads and the approach to Lubec Channel. The Channel is marked with three red numbered buoys, numbers 2, 4, and 6, three black can buoys numbered 1, 3, and 5, and the Lubec Channel Light, which also has an audible fog horn. Lubec Narrows has strong tidal currents and eddies. One should not use this passage without local knowledge. At the red buoy number 2, on a clear day, the Lubec standpipe is to the north westward, the steeple on the Congregational Church and the chimney on the former "Puss and Boots" plant are visible to the north. The steeple is equipped with floodlights and is visible at night.

Shoals are bare on both sides of the Lubec Narrows at low tide. A breakwater extends form shore point on the west side of the Channel about 300 yards northward of the southern end of the Narrows. Another breakwater extends from the shore to Gun Rock and 75 yards eastward of the rock on the west side of the Narrows. This breakwater has a white pyramid near the eastern end. This breakwater is covered by and during extremely high tides. There is a ledge about 150 yards north easterly from Gun Rock covered with 7 feet of water at low tide and is marked on its north end by a can buoy numbered 7. Directly to the east of Gun Rock are some very large rocks, which are almost exposed on mean low water. These conditions are marked by a large black buoy numbered 5A. Boats should pass to the east of this buoy.

The northern entrance to the Lubec Narrows is through Friars Roads between Treat Island and Dudley Island on the northwest, and Friar Head on the east, and past Popes Folly Island on the southwest.

The Franklin D. Roosevelt Memorial Bridge crosses the Lubec Narrows at a point about 400 yards southward of the abandoned lighthouse on Mulholland Point. Chart C. & G.S. 801 hives a vertical clearance of 47 feet at mean high water.

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Existing moorings are all private. They are located off the old Colubian factory, off the old Globe factory, and in the Rogers Island thoroughfare.

Town owned moorings are planned in the same area for transient vessels.

There is a state boat launching facility for small pleasure craft located at the east end of the entrance to Johnson Bay, next to the breakwater at the north end of the Lubec Narrows. This boat launching facility has a concrete ramp for boats on trailers and also has 16 wooden floats. Eleven floats are used to assist in launching, and five floats moored east to west provide short term docking facilities for small pleasure craft to load and unload. No long time tieups to the floats are permissible. There is a paved parking area for cars and boat trailers.

The commercial pier is located adjacent to the west of the state boat launching facility. This pier provides loading and unloading facilities for commercial fishing vessels, tie up privileges, refueling available, telephone, and access to Town facilities.

C. Anchorage; vessels shall be anchored in the Harbor in such places or areas as the Harbor Master shall direct. The Harbor Master may at any time order any vessel at anchor to change position when in his opinion such vessel is so anchored as to impede navigation or to endanger other vessels.

D. Moorings; these regulations are promulgated to meet the U.S. Army Corps of Engineers requirements for federal anchorages and title 38, Maine Revised Statutes (M.R.S.A.), Section 2 as amended.

1. All moorings space will be under the exclusive control of the Harbor Master and must be assigned on a first come first served basis, from an established list of boat owners maintained by the harbor master. Application permits for a mooring shall be requested annually from the Port Authority. The Port Authority shall review this application permit with regard to space available for the type of boat so indicated. Upon approval of the Port Authority it is the responsibility of the applicant to submit the approved application permit to the Town Clerk together with all fees due. The applicant will then present the mooring application permit as receipted by the Town Clerk to the Harbor Master who will assign a registration number and location for such mooring and advise the applicant concerning the requirements of these rules and regulations. The individual has the option of renting the hardware at a negotiated fee or providing his own hardware. Approved mooring application permits are not transferrable without reapplication.

2. Marinas or any individual shall not control or assign any mooring space except to rent mooring hardware to the assignee on request. At the termination of assignment of any mooring space to an individual, the mooring

hardware will be removed unless the new assignee indicates his option to utilize the existing hardware.

3. Owner of moorings shall be libel for any and all fees due the Town of Lubec resulting from usage of their moorings.

4. The Harbor Master shall, insofar as the same may be done consistently with these rules and regulations and with due regard for the safety of other vessels and of navigation, give consideration to the choice of the applicant. However, where mooring rights of the individuals are claimed to be invaded and protection is sought of the Harbor Master, he shall assign and indicate to the masters or owners of the vessels the location which they may occupy for said mooring, and he shall assign mooring privileges in all cases where individuals who own or have an interest in the shore rights are complaints, and shall locate suitable mooring privileges temporarily or permanently, fronting their lands if so requested, but not so as to encroach upon the natural channel or channels established by this authority.

5. Adequacy of moorings; all existing moorings hereinafter to be set shall be of sufficient size to hold the vessel for which it is used. An "adequate mooring" under this section shall conform to the following requirements:

   a. All moorings shall have been approved with the registration number assigned by the high and shall be clearly visible at all times. The Harbor Master may at any time examine any mooring or mooring line to determine compliance with this section, except in cases of emergency, he shall notify the owner of his intention to examine the moorings and request the presence of the owner during such examination. Moorings found to be inadequate with regards to the requirements of this section shall be corrected within 24 hours or removed. Any cost of examination or removal resulting therefrom shall be borne by the owner of the mooring.

   b. During the period form May 15 to October 15, no mooring shall be in excess of 40 feet in length from the anchor or block to the stem of the vessel and top lines shall be limited to 1/2 the length of the boat, except by written permission of the harbor master.

Boat moorings shall, at a minimum, comply with the following:

| Length, Boat, Max | Chain Size | Mushroom Weight | Granite Weight | Pennant Length | Pennant Strength |
|---|---|---|---|---|---|
| 15' | 5/16" | 100 lbs. | 2,000 lbs. | 4' | 400 lbs. |
| 20' | 3/8" | 150 lbs. | 2,000 lbs. | 8' | 600 lbs. |
| 25' | 3/8" | 200 lbs. | 4,000 lbs. | 10' | 800 lbs. |
| 30' | 1/2" | 300 lbs. | 6,000 lbs. | 10' | 1,200 lbs. |
| 35' | 1/2" | 350 lbs. | 6,000 lbs. | 10' | 1,400 lbs. |
| 40' | 5/8" | 400 lbs. | 6,000 lbs. | 10' | 1,600 lbs. |
| 45' | 5/8" | 450 lbs. | 6,000 lbs. | 10' | 1,800 lbs. |
| 50' | 5/8" | 500 lbs. | 6,000 lbs. | 10' | 2,000 lbs. |

Chain length required is a 3 to 1 scope of water depth at Mean High Water. Mushroom or granite anchor may be used.

6. Vessels moored so as to impede Navigation or endanger other vessels; All moorings whether now existing or hereinafter set shall be so located or relocated that the vessels secured thereby will not impede navigation within the Harbor nor endanger other vessels moored therein. If the Harbor Master shall find that any vessel is so moored as to as to impede navigation or to endanger other vessels he may require that the owner of the mooring or the vessel secured thereby take such steps, whether by shortening the scope of the mooring lines or by the use of additional mooring lines or mooring, as will prevent such impeding of navigation or endangering of other vessels. Or in the alternative he may order that the mooring be removed and relocated in the manner described in Section D4. In requiring the removal of a mooring because of the danger to other moorings, the mooring last set shall be the ordered to be removed. Any person so ordered by the Harbor Master acting under this paragraph shall remove the same within 48 hours after ordered; provided however that if the Harbor Master shall find that an emergency requiring immediate action to prevent injury to life or damage to property, he may cause said mooring or any vessel attached thereto to be removed and relocated. Any expense involved shall be borne by the owner of the mooring or vessel being removed.

7. Moving or interfering with moorings belonging to another; except by direction of the Harbor Master or with permission of the owner, no person may move or interfere with any vessel in this Harbor.

8. Courtesy moorings; courtesy moorings are provided for the use of visiting vessels. Such vessels may use these moorings for a period of no longer than 24 hours, except under unusual circumstances with express permission of the Harbor Master.

9. All boat owners who have not renewed their float or mooring assignment with the Harbor Master by May 1 of each year will be considered as abandonment of their assignment. Accordingly, the Harbor Master will make new assignments from the "standard mooring list" or "float list" as applicable.

E. Buoys other than for mooring vessels; no buoy of this type shall be placed in channels leading to wharves, nor shall such buoys by placed within three vessel lengths from a mooring for that vessel. The Harbor Master is empowered, in the interest of public safety, to require the removal of any buoys.

F. Public wharves and landings:

1. Obstruction; no person shall obstruct by any means whatsoever the free use of piers, docks, and other public landing places. The town wharves shall be used only for loading or unloading. Vessels shall not remain moored to the wharf or float for a period longer than reasonable necessary for this purpose, except by permission of the Harbor Master. The Harbor Master shall remove or cause to be removed any unattended vessel obstructing free use of the piers, docks, or other public landing places, after due effort has been made to notify the master or owner of said vessel of the above violation.

2. No person shall loiter, create a public nuisance, or partake of alcoholic beverages on town wharves or landings. Town wharves or piers may be closed from 11 p.m. to 5 a.m. by the Police Department when it is warranted by acts of vandalism or disturbance of the peace.

3. Swimming and fishing; no person shall dive from, swim, or skin dive without permission of the harbor master, within 30 feet of town-owned floats. No person shall fish from town-owned floats.

   a. All dinghies, skiffs, or tenders tied to town-owned floats shall allow at least 10 feet of line between the boat and the float.

b. No boat more than 12 feet in length shall be tied to a town-owned float except for loading and unloading.

4. Storage; personal property such as lobster traps, bait, automobiles, cradles, boats, floats, etc., shall not be stored on town wharves or landings. Exceptions to this rule shall be considered on an individual basis when submitted in writing to the Port Authority. The designated loading zone shall be used for lobster traps, fishing gear, and items in transit.

5. Construction; no additions, alteration, new construction or changes to existing structures at any wharf, pier, or landing shall be made without prior permission of the Port Authority. Permission for the construction of any new wharves or piers within the jurisdictional limits of the Port Authority shall not be granted without approval of the Port Authority.

G. Waste and refuse; no person or vessel shall deposit, throw, sweep, or cause to be deposited or swept into the waters of Lubec, or into waters adjacent thereto, any gas or oil or bilge water containing same, ashes, stones, gravel, mud, logs, planks, or any other substance tending to obstruct the navigation of said Harbor or waters adjacent thereto, or to shoal the depth of said Harbor or pollute the waters thereof. No trash or refuse shall be placed on any town float or pier except in designated containers.

HARBOR MASTER

The Harbor Master shall enforce the rules and regulations pertaining to harbors and tidal waters under the jurisdiction of the Lubec Port Authority as promulgated by the authority, and shall cooperate with other government agencies in enforcing their regulations. He shall, under the supervision of the Authority, oversee the jurisdictional area of this authority, preserve and regulate navigation within said removal of vessels, if necessity or emergency requires, inquire into and prosecute all offenses occurring within and shall perform such other duties as the authority may prescribe. The Harbor Master's appointment may be revoked at any time by the Authority for cause. Each Harbor Master shall be appointed for a term of one year, his qualifications, salary, and expenses to be determined by the authority. The Harbor Master shall be empowered to make arrests for offenses under the provisions of the regulations as other peace officers are authorized to do.

PENALTY

Whoever violates any of these rules or regulations or refuse or neglects to obey the lawful and reasonable orders of a Harbor Master, or resists him in the execution of his duties, shall be punished by a fine of not more than $50.00.

WATER SKIING, SKIN AND SCUBA DIVING, AND AIRCRAFT

A. Vessels towing water skiers and aquaplanes; there shall be no water skiing in congested moorings, anchorages areas or in speed limit areas. Water skiing shall be governed by the appropriate rules and regulation of the state. Except in connection with water carnivals and exhibitions as authorized by the Port Authority, no such activity shall be conducted between one-half hour after sunset and one-half hour before sunrise. Special water skiing areas may be designated by the Port Authority.

B. Water Ski jumps; no person shall locate for use on the public waters under the jurisdiction of this authority a water ski jump without first obtaining the approval of the Port Authority or its duly authorized representative.

C. Skin and scuba diving; skin and scuba divers shall be governed by the appropriate rules and regulations of the state.

D. Aircraft; aircraft shall be governed by the appropriate rules and regulations of the Maine Aeronautics Commission, excepting that they shall observe the same mooring and anchorage rules and regulations that apply to vessels.

FEDERAL REGULATIONS

Nothing herein shall be considered as conflicting with Federal laws applicable to the coastal waters and tidal waters and tidal rivers and harbors of the State.

EFFECTIVE DATE

These rules and regulations shall take effect on _____, and shall remain in effect until altered or repealed by the Authority.

Authorized by the Selectmen of Lubec

Enforced by the Harbor Master and such law officers as required.

# APPENDIX E

MOORING APPLICATION

MOORING APPLICATION

Lubec, Maine

With reference to MRSA 1964 Title 38 Par. 3, permission is hereby granted to _____ for one mooring at _____.

Allen R Townsend Jr

Harbor Master

RHO/mcc

State of Maine
Washington ss

Lubec, Maine
Date issued _____

Then personally appeared the above-named _____ and made oath before me that the foregoing instrument signed by him was true.

_____
Notary Public

# APPENDIX F

APPLICATION/PERMIT FOR MOORING LOCATION

APPLICATION FOR MOORING LOCATION

TO: Harbor Master, Town of Lubec, Maine DATE: _____

FROM: _____ _____
(Print Name) (Address)

Please consider my request for:

1. New Mooring Location ( ) at _____ part of the harbor.

2. Old Mooring Relocation ( ) from _____ part of the harbor,
to _____ part of the harbor.

This mooring will be used Year Round ( ), Summer Only ( ) for the boat: NAME: _____ NUMBER: _____

Length overall: _____ Beam: _____ Draft: ____

Type of mooring that I plan to use:

Granite ( ), Weight _____#, Mushroom ( ), Weight _____#,

Other _____ Size of Chain _____ Length of Chain _____

Size of Pennant _____ Length of Pennant _____

Type of Marker: Log ( )

Buoy ( )

Signed: _____

PERMIT FOR MOORING LOCATION

FROM: Harbor Master, Town of Lubec, Maine

To: _____ Address: _____

Permission is granted to you to set _____ boat mooring of the following type and size:

TYPE _____ WEIGHT _____ SIZE OF CHAIN _____

LENGTH OF CHAIN _____ SIZE OF PENNANT _____

LENGTH OF PENNANT _____.

Location of mooring to be at _____

I, the undersigned, agree to supply adequate mooring gear of not less than what is set forth in this permit and also to maintain my mooring as set forth by Town Ordinances and States Statutes that apply. It is further noted that each mooring owner is to have two (2) markers, one to be painted and installed on the mooring by no later than June 15th of each year; the other to be taken ashore and dried, painted and installed the following year. In the event of transfer, sale or discontinuance of the mooring, the Harbor Master will be given notice of the same.

SIGNED: _____
Owner

Permit granted and issued by _____ DATE: _____
Harbor Master

# APPENDIX G

LUBEC COMMERCIAL PIER & HARBOR FEES

# LUBEC COMMERCIAL PIER
# AND HARBOR FEES

The Town of Lubec has established these fees for the use of Port Facilities.

The revenues hereby obtained are to be allocated to the operation and maintenance of the Port and Port Facilities.

Moorings:

1. Town Moorings (when available) are for the use of transient vessels. The charge shall be $10 basic rental, plus .50 cents per foot for vessels over 25 feet, per night or 24 hour period.

2. Private moorings must be applied for each year by the applicant at the Town Office, and a permit issued by the Harbor Master. Annual fee is $10, due 1 January each year.

Commercial Pier:

1. Tieing up to the pier requires permission of the Harbor Master. There is no charge for two hours time or less. The fee for transients, from two hours to twenty four hours, is $10.

2. Slip rental on the pier, by residents, is $15 per month plus .50 cents per foot. Limited to vessels under 100 feet. Non-residents fees is $30 per month plus $1 dollar per foot.

3. Use of the Commercial pier Floats for loading or unloading, under two hours, no charge. Over two hours requires permission of the Harbor Master, and a fee of $5 per hour for each hour over two hours.

4. Use of the Pier Lift requires permission of the Harbor Master. The fee is $4 per hour.

5. Large vessels, cargo or pallet type, loading or unloading, and requiring full use of the pier, require permission of the Harbor Master. The fee will be set by the tonnage transferred.

## COMMERCIAL PIER & HARBOR FEES CONT'D

6. Use of electricity requires permission of the Harbor Master, and a set fee will be charged according to the number of kilowatts used.

7. Outside ties are authorized. Tie rates are the same for outside ties as for inside ties.

8. All ties, and the location of the tie, is at the discretion of, and the approval of the Harbor Master. Tied vessels may be moved to another tie on the pier by the Harbor Master if in his judgment the space is temporarily needed for the safe operation of the pier.

9. No ties are authorized on the East end of the pier as this end is reserved for loading and unloading with the assist of the Pie Lift. Tieing during the use of the Lift is of course authorized and expected.

10. Truck access on the Pier is at no charge.

11. Fees for unloading fish/shellfish, or loading, will be set at a rate per pound. Any amount under two hundred pounds requires no fee.

Authorized by the
Selectmen of Lubec

Enforced by the
Harbor Master and
Such Law Officers
as Required.

EFFECTIVE JANUARY 1, 1980